Herndon Avenue Interchange Improvements

Fresno, California
Project ID 06-0002-0131
EA# 06-0L0300
06-FRE-99 PM 30.0/30.8

Initial Study
with Proposed Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

October 2011

Caltrans®

General Information about This Document

What's in this document?

The California Department of Transportation (Caltrans), the California Environmental Quality Act (CEQA) lead for this project, has prepared this Initial Study with Proposed Mitigated Negative Declaration, which examines the potential environmental impacts of alternatives being considered for the proposed project in the City and County of Fresno, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures.

What you should do?

- Please read the document.
- Additional copies of the document and related technical studies and memorandums are available for review at the Caltrans District 6 office at 1352 West Olive Avenue, Fresno, CA 93778 and at the Fresno County Public Library at 2420 Mariposa Street, Fresno, CA 93721.
- Attend the public hearing on November 3, 2011.
- Tell us what you think. If you have any comments on the proposed project, please attend the public hearing and/or send your written comments to the Caltrans by the deadline.
- Submit comments via U.S. mail to:

  G. William "Trais" Norris III, Senior Environmental Planner
  Sierra Pacific Environmental Analysis Branch
  Caltrans District 6
  855 M Street, Suite 200
  Fresno, CA 93721

- Submit comments via email to: trais_norris@dot.ca.gov
- Be sure to submit comments by the deadline: November 28, 2011

What happens next?

After comments are received from the public and reviewing agencies, Caltrans may 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and build all or part of the project.

Printing this document: To save paper, this document has been set up for two-sided printing (to print the front and back of a page). Blank pages (or diamond pages) occur where needed throughout the document to maintain proper layout of the chapters and appendices.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audio cassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: G. William "Trais" Norris III, Sierra Pacific Environmental Analysis Branch, 855 M Street, Suite 200, Fresno, CA 93721, 559-445-6447 Voice, or use the California Relay Service TTY number, 1-800-375-2929 or 711.

06-FRE-99 PM 30.0/30.8
Project ID 06-0002-01310
EA 06-0L0300

Improve Herndon Avenue interchange on State Route 99 in Fresno

INITIAL STUDY

With Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

10/7/11
Date of Approval

Jennifer H. Taylor, Office Chief, South Central Region Environmental Division
California Department of Transportation
CEQA Lead Agency

Proposed Mitigated Negative Declaration

Pursuant to: Division 6, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) in cooperation with the City of Fresno proposes to make improvements to Herndon Avenue at State Route 99 including installing signals, widening the roadway and ramps, and removing the southbound off-ramp (Grantland exit).

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision on the project is final. This Mitigated Negative Declaration is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The project would have no effect on: wild and scenic rivers, parks and recreation, farmlands/timberlands, utilities and emergency services, visual/aesthetics, water quality, geology/soils/seismic/topography, hydrology/floodplains, noise, natural communities, plant communities, threatened and endangered species, or wetlands and other waters.

The project would have no significant effect on land use, community impacts, growth, traffic/transportation, hazardous waste, or air quality.

In addition, the project would have no significant impact on cultural resources, paleontology, or animal species because the following mitigation measures would reduce potential effects to insignificance:

- Native American monitoring would be coordinated by the City of Fresno with local tribal communities based on previous involvement with highway and development projects in the area, with guidance from the Native American Heritage Commission.
- Implementation of and compliance with the Paleontological Mitigation Plan.
- Biological impacts caused by the removal of two eucalyptus trees would be mitigated by compliance with the measures stated in this document. The eucalyptus trees would be replaced by this project in accordance with current setback standards.

_____ _____

Jennifer H. Taylor, Office Chief, South Central Region Environmental Division
California Department of Transportation

Date

Table of Contents

List of Figures

List of Tables

List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
$PM_{2.5}$	Particulate matter (ambient) 2.5 microns or less in size
PM_{10}	Particulate matter less than 10 microns in size

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) in cooperation with the City of Fresno proposes to make improvements to Herndon Avenue at State Route 99, including installing signals, widening the roadway and ramps, and removing the southbound off-ramp. The project location and vicinity maps are shown in Figures 1-1 and 1-2.

The City of Fresno is the project sponsor for this project, and Caltrans is the lead agency under the California Environmental Quality Act. Funding for the project is being provided by private developer fees.

A Caltrans project currently under construction—the North Fresno Six-Lane project—is widening State Route 99 through the project area. The Grantland Avenue Overcrossing bridges have been widened by decking the inside median to accommodate three lanes in each direction.

A new interchange is proposed by the City of Fresno one mile south of the Herndon interchange on State Route 99. The Veterans Boulevard Interchange is planned to open in 2017.

1.2 Purpose and Need

1.2.1 Purpose of the Project

The purpose of the proposed project is to improve traffic operations and relieve congestion at the existing Herndon Avenue interchange intersections and at the Herndon Avenue/Parkway Drive intersection.

1.2.2 Need for the Project

Improve Traffic Operations and Relieve Congestion

The five intersections that are part of or adjacent to the Herndon Avenue interchange are experiencing rapidly increasing traffic volumes.

Average traffic volume per year at an intersection can be measured by dividing the total traffic for one year by 365 days to obtain the "annual average daily traffic" count. Table 1.1 shows the annual average daily traffic counts for intersections within and adjacent to the project for existing conditions, for 2013 (the proposed construction year), and for 2035 (future conditions).

Table 1.1 Existing and Predicted Annual Average Daily Traffic Without Project

Intersection	Annual Average Daily Traffic Counts		
	(Existing)	2013	2035
Grantland Avenue/Parkway Drive/State Route 99 southbound on-ramp	**8,600**	**21,700**	**23,100**
Herndon Avenue/Parkway Drive	**9,100**	**21,900**	**23,700**
Southbound off-ramp (Grantland Avenue exit)/Herndon Avenue	**9,700**	**22,693**	**24,600**
State Route 99 northbound off-ramp/Herndon Avenue	**13,600**	**32,000**	**30,800**
Golden State Boulevard/Herndon Avenue	**22,800**	**49,100**	**52,000**

Source: Traffic Memo prepared for this project (September 2011).

In 2013, traffic is projected to increase by 13,100 daily vehicles from the existing traffic volume at the Grantland Avenue/Parkway Drive/State Route 99 southbound on-ramp intersection. At the Herndon Avenue/Parkway Drive intersection, traffic is expected to more than double by 2013. Traffic volumes are expected to increase on the State Route 99 northbound off-ramp/Herndon Avenue intersection from 13,600 vehicles a day to 18,400 vehicles a day by 2013. If the State Route 99 southbound off-ramp (the Grantland Avenue exit onto Herndon Avenue) is still in use in 2013, the annual average daily traffic count is projected to increase from 9,700 vehicles to 22,693 vehicles.

Intersection operation is described in terms of "level of service." Six levels are defined, ranging from level of service A (the best operating conditions) to level of service F (the worst operating conditions). Level of service for intersections is determined by how many seconds a vehicle must wait at a stoplight or stop sign before turning or driving through the intersection. Caltrans' goal is to maintain the level of service on its facilities at the transition between level of service C and level of service D. For signalized intersections and ramp terminals, the transition is at 35 seconds of delay per vehicle passing through the intersection.

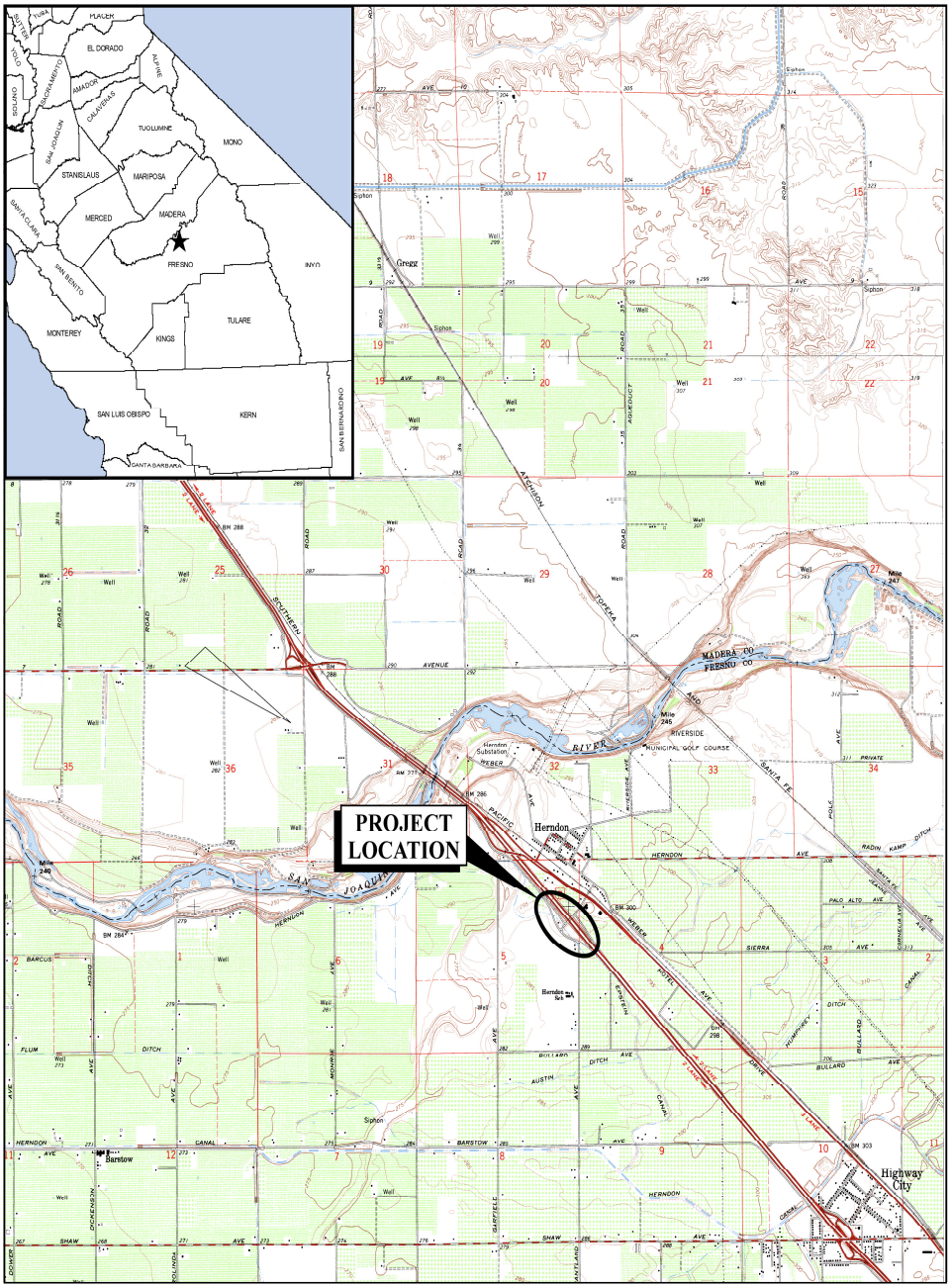


Figure 1: Project Vicinity

Figure 1-1 Project Vicinity Map

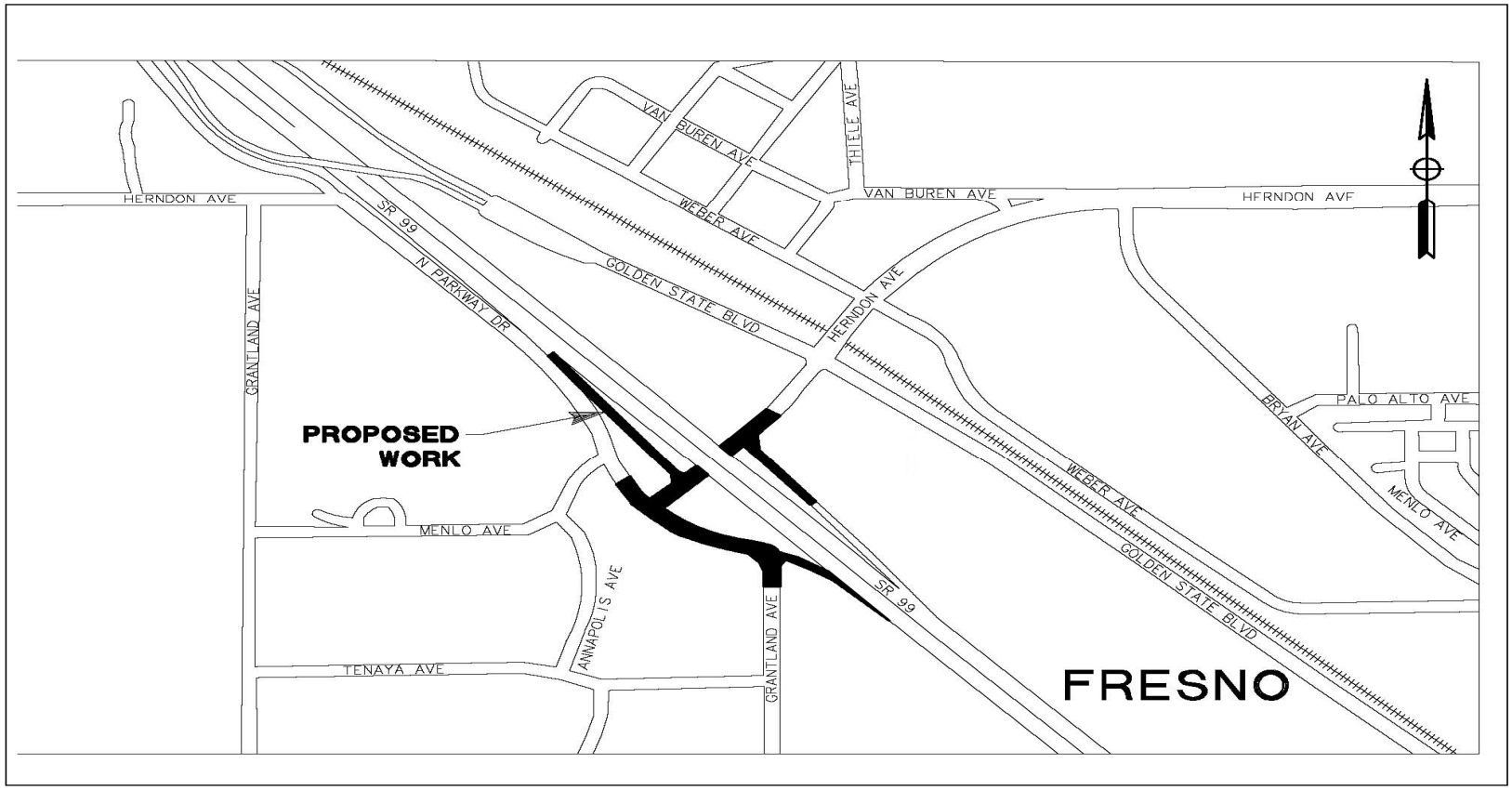


Figure 2: Project Location

Figure 1-2 Project Location Map

Table 1.2 shows the existing and predicted level of service at intersections within the project area if the proposed project is not built. Traffic analysis indicates that by 2013 all of the interchange intersections would operate at level of service F.

Table 1.2 Existing and Predicted Levels of Service Without the Project

Intersection	Control	(Existing)		2013		2035	
		Morning Level of Service	Afternoon Level of Service	Morning Level of Service	Afternoon Level of Service	Morning Level of Service	Afternoon Level of Service
Grantland Avenue/ Parkway Drive/ State Route 99 southbound on-ramp	Stop sign	C	B	F	F	F	F
Herndon Avenue/ Parkway Drive	Stop sign	F	E	F	F	F	F
State Route 99 southbound off-ramp (Grantland Avenue exit)/Herndon Avenue	Stop sign	D	C	F	F	F	F
State Route 99 northbound off-ramp/ Herndon Avenue	Stop sign	E	F	F	F	F	F
Golden State Boulevard/ Herndon Avenue	Signal	C	C	C	D	E	F

Source: Traffic Memo prepared for this project (September 2011).

The State Route 99 northbound off-ramp exiting onto Herndon Avenue is now a "T" intersection controlled by a stop sign for left turns and a yield sign for right turns; traffic on Herndon Avenue does not stop. Currently, this intersection operates at level of service E during the morning peak traffic hour and level of service F during the afternoon peak traffic hour. This is below the Caltrans minimum level of service for intersections explained above. The operation of this intersection is predicted to decline to level of service F in 2013 during both the morning and afternoon peak traffic hours.

At the Herndon Avenue/Parkway Drive "T" intersection, vehicles cross through an intersection controlled by three stop signs. During the morning peak traffic hour, the level of service for this intersection is F; for the afternoon peak hour, the level of service is E. This is below level of service D, the minimum acceptable to the City of Fresno for intersections on major arterial streets. Traffic conditions are expected to deteriorate further

so that in 2013, the level of service would be F during both the morning and the afternoon peak traffic hours.

Vehicles travelling north on Grantland Avenue must stop at the "T" intersection before turning left across an uncontrolled southbound Parkway Drive or right onto the southbound on-ramp. Under existing conditions, this intersection operates satisfactorily with levels of service C and B during the morning and afternoon peak hours, respectively; however, in 2013, increasing traffic is expected to result in level of service F during both the morning and the afternoon peak traffic hours.

At the State Route 99 southbound off-ramp/Herndon Avenue intersection (Grantland exit), both the nearness of the ramp to the Herndon Avenue/Parkway Drive intersection and backed-up traffic along westbound Herndon Avenue make access to Herndon Avenue from the southbound off-ramp extremely difficult for motorists turning left. This results in an unsatisfactory level of service D in the morning peak hour. In the afternoon peak hour, the southbound off-ramp operates at level of service C. In 2013, congestion is projected to increase to the point that the level of service would be F during both the morning and the afternoon peak traffic hours at this intersection.

According to Caltrans Traffic Operations, the Grantland exit is underused. Under existing conditions, the levels of service for the ramp were D (in the morning peak) and C (in the afternoon peak) due to the heavier morning peak volume along Herndon Avenue. Roughly 11 percent (morning peak) and 13.3 percent (afternoon peak) of the southbound traffic accessing Herndon Avenue use the existing southbound Herndon Avenue off-ramp. In addition, 89 percent of southbound traffic uses the Golden State Boulevard exit to reach Herndon Avenue during the morning peak, and 86.7 percent of vehicles exiting use it instead of the Grantland Avenue exit during the afternoon peak hour. Roughly 24 percent of the vehicles are trucks.

Future Needs

Near the Herndon Avenue/State Route 99 interchange, the City of Fresno has projects (approved and pending) that consist of the following: 537 units of residential development west of State Route 99; 447 units of residential development and about 225,000 square feet of commercial development east of State Route 99. These projects are either not fully occupied or built at this time.

In addition, the first phase of a new 238-acre mixed-use development (the El Paseo project) just east of State Route 99 and south of Herndon Avenue was approved on December 17, 2010 by the Fresno City Council. The Marketplace at El Paseo will be a large retail shopping center that includes big box stores. Future phases planned by the developer are a

lifestyle center or town center project with a 132-room hotel, a mid-rise office park, a light-industrial business park with a 120-room hotel, and a neighborhood retail/commercial center.

1.3 Alternatives

1.3.1 Build Alternative

The Build Alternative would remove the southbound State Route 99/Herndon Avenue off-ramp (the Grantland Avenue exit). Existing pavement (traveled lane and shoulders) along the southbound off-ramp would be removed. With the removal of the southbound Herndon Avenue off-ramp, all vehicles accessing Herndon Avenue would have to exit State Route 99 at the Golden State Boulevard off-ramp, toward the North Golden State Boulevard/ Herndon Avenue intersection.

Herndon Avenue (between Parkway Drive and the northbound off-ramp) would include shoulder improvements, with restriping for two westbound lanes and one eastbound lane and a sidewalk on the north side.

The westbound approach at the Herndon Avenue/Parkway Drive intersection would have dual left-turn lanes and a single right-turn lane. Parkway Drive would be improved to have two southbound lanes and a single right-turn lane (to Grantland Avenue) and one northbound lane with a right-turn lane (to Herndon Avenue). The southbound on-ramp would be improved to two lanes with ramp metering.

Traffic signals would be installed at the intersections of Herndon Avenue/northbound off-ramp, Herndon Avenue/Parkway Drive, and Grantland Avenue/Parkway Drive/southbound on-ramp. The Herndon Avenue/northbound off-ramp signal would be synchronized with the Golden State Boulevard/Herndon Avenue signal just east of the interchange. The northbound off-ramp would be improved to accommodate a single left-turn lane and dual right-turn lanes.

Improvements would include making road cuts extending to a depth of 4 feet, importing embankment fill, building the signal pile foundation to a depth of 16 feet, trenching and placing signal interconnect conduit to a depth of 2 feet, placing storm drain lines to a depth of 5 feet, building roadside ditches, and paving.

Construction of an embankment along the west side of Parkway Drive would encroach into an existing Fresno Irrigation District easement; a Common Use Agreement between the City and Fresno Irrigation District would be required to build the embankment. Construction of the embankment and pavement for a right-turn lane along the east side of Parkway Drive would encroach into the state right-of-way; a Maintenance Agreement

between the State and the City would be required. No right-of-way acquisition would be needed for the project.

The project is planned by the City of Fresno as mitigation of traffic impacts by the El Paseo Marketplace development. Although 2013 is the planned construction year, the project may be built in two phases depending upon how quickly construction of the El Paseo Marketplace occurs. Before the first 200,000 square feet of retail space is open for business, the following would occur:

- The traffic signal at Herndon Avenue/State Route 99 northbound off-ramp would be installed.
- The northbound off-ramp would be widened.
- The southbound State Route 99/Herndon Avenue off-ramp (the Grantland Avenue exit) would be removed.

After 200,000 square feet of retail space has been built at the El Paseo Marketplace, but before the total built area is 300,000 square feet, the rest of the Herndon Avenue Interchange project would be built as described above.

1.3.2 No-Build Alternative

The No-Build Alternative would keep the current interchange and ramp structure configurations as they are. The No-Build Alternative would not meet the purpose and need of this project, and traffic conditions would continue to deteriorate. Under No-Build conditions (in 2013), all of the study intersections are projected to operate at level of service F.

1.3.3 Comparison of Alternatives

The No-Build Alternative would keep this segment of the roadway in its current condition. This alternative would not meet the purpose or need for the project because traffic conditions would continue to deteriorate with future development of the area. Table 1.3 compares the Build Alternative to the No-Build Alternative.

Table 1.3 Comparison of Alternatives

Evaluation Criteria	Build Alternative	No-Build Alternative
Reduces Congestion	Morning and afternoon levels of service would improve from level of service F to levels of service B and D for opening day.	There would be no reduction in congestion, and level of service would continue to deteriorate.
Improves Traffic Operations	Elimination of the off-ramp would improve intersection spacing, which would improve operations and eliminate conflicting traffic movements.	There would be no improvement to traffic operations.
Minimizes Environmental Impacts	Improved operations would improve air quality. Other impacts are less than significant.	There would be no additional effect on the environment.
Meets Purpose and Need	Yes	No

1.4 Permits and Approvals Needed

The following permits/approvals would be required for project construction:

Agency	Permit/Approval	Status
Caltrans	Encroachment Permit	Pending
Caltrans, City of Fresno, County of Fresno	Freeway Agreement*	Pending
Caltrans, City of Fresno, County of Fresno	Maintenance Agreement	Would be completed during Project Specifications and Estimate phase of project
Caltrans	National Pollutant Discharge Elimination System (NPDES) Permit	City of Fresno to submit application in each project phase
City of Fresno and Fresno Irrigation District	Common Use Agreement	Would be completed during Project Specifications and Estimate phase of project

** Pending Freeway Agreement is for the Veterans Boulevard project, which includes the Herndon Avenue improvements.*

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow. Related regulatory information—the laws, regulations, and governmental and regulatory agencies involved for each impact area—is provided in Appendix E.

As part of the scoping and environmental analysis done for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion of these issues in this document.

- Wild and Scenic Rivers—No rivers classified as Wild and Scenic were identified in the proposed project area (Field Visit, February 4, 2011).
- Parks and Recreation—No parks or recreation facilities were identified in the proposed project limits (Field Visit, February 4, 2011).
- Farmlands/Timberlands—There is no farmland or timberland in the project footprint (Community Impact Assessment memo, March 2011).
- Visual/Aesthetics—Removal of two eucalyptus trees would have minor visual impacts for the travelers along this corridor (Emails from Caltrans Landscape Architect, August 24, 2011).
- Water Quality and Storm Water Runoff—With the incorporation of best management practices and proper and accepted engineering practices, the project would not have adverse effects on surface or groundwater runoff (Island Park Water Quality Report, March 2010).
- Hydrology and Floodplain—Roadway runoff would be collected in gutters, drains, and open ditches and conveyed to existing drainage systems. The additional runoff generated by the increased paving, combined with removal of paving for the southbound off-ramp, would not create any net new impervious surfaces. No additional storm water runoff capacity is necessary. The proposed project would not result in

either longitudinal or transverse encroachment of a floodplain. Since the project is in Zone X, the floodplain impact is not an issue for the project (Island Park Location Hydraulic Study, 2008).

- Geology/Soils/Seismic/Topography—No known faults exist in the project area. The project would not result in soil erosion or landslides. The project is not located on a geologic unit or soil that is unstable or that would become unstable as a result of the project (Island Park Geotech Memo, April 2008).
- Noise—No adverse noise impacts from construction equipment are anticipated due to compliance with Caltrans specifications. Construction would be short term, intermittent, and overshadowed by local traffic noise. No sensitive receptors in the project area would experience substantial long-term noise impacts (Noise Memo, September 2011).
- Natural Communities—No natural communities were identified in the project area (Biological Compliance Memo, September 2011).
- Wetlands and other Waters—No wetlands or other waters were identified in the project area (Biological Compliance Memo, September 2011).
- Plant Species—No special-status plant species were identified in the project area (Biological Compliance Memo, September 2011).
- Threatened and Endangered Species—No threatened or endangered species were found in the project area (Biological Compliance Memo, September 2011).

2.1 Human Environment

2.1.1 Land Use

This section of the environmental document discusses the project's impacts on land use and is based on the March 2011 Community Impact Memo and additional research.

2.1.1.1 Existing and Future Land Use

Affected Environment

Land use designations in the project area were identified using the City of Fresno's General Plan 2025. These land uses consist of single-family residential, light industrial and commercial. Along Golden State Boulevard south of Herndon Avenue, the parcels approved by the City for the El Paseo Marketplace development are now zoned regional commercial.

On the west side of State Route 99, E-Z Trip service station sits along Herndon Avenue between Parkway Drive and the Herndon Avenue southbound off-ramp (Grantland exit). The west side of Parkway Drive/Herndon Avenue is a fallow field. Residential homes in a neighborhood setting sit to the west and south; Menlo Avenue and Grantland Avenue

provide access to these neighborhoods. On the east side of State Route 99 along Golden State Boulevard (both north and south of Herndon Avenue) are various commercial and industrial uses: hotels, restaurant, coffee shop, fast food, service station, truck stop. One service station, northeast of the State Route 99 northbound off-ramp, has driveway access on the south side of Herndon Avenue.

The project area is within the City of Fresno's sphere of influence, although the area west of the State Route 99 freeway has not yet been incorporated into the city limits. Current and proposed commercial and residential developments within 1 mile of the project location are shown in Table 2.1.

Table 2.1 Development Projects

Name	Location	Jurisdiction	Proposed Uses	Status
El Paseo Phase 1 Marketplace	Between Herndon, Golden State, and Bryant Avenues	City of Fresno	Shopping center, including retail and restaurants, discount superstore, discount store, and home improvement store.	City approved Environmental Impact Report December 16, 2010 Development Agreement July 2011
El Paseo Phases 2-5 (Master Plan)	Bounded by Herndon Avenue, Golden State Avenue, Bryant Avenue, Carnegie Avenue and Bullard Avenue	City of Fresno	Phase 2: shopping center, office park, health/fitness center, multiplex theater, business hotel, discount story, shopping center	City required these phases to be conditioned on the completion of the Veterans Boulevard interchange project. Project-level environmental analysis of future phases required (December 16, 2010)
			Phase 3: business hotel, business part, shopping center	
			Phase 4: shopping center	
			Phase 5: general office	
	Bounded by Herndon Avenue, Golden State Avenue, and State Route 99	City of Fresno	Phased construction of: 94-room Hampton Inn hotel, 88-room Holiday Inn Express hotel, 3 fast food restaurants, a gas station and mini mart, and 34,800 square feet of retail	Holiday Inn Express, Starbucks, and Yukon Jack's are open. Hampton Inn has not yet opened.
Aquarius Aquarium Institute	West of State Route 99 and south of the San Joaquin River	City of Fresno	Business/recreation and tourism	Still in early planning stages

Environmental Consequences

The Build Alternative would not require or encourage a change in land use. The proposed project would not conflict with current land use designations.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigations measures are required.

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

Fresno County Regional Transportation Plan 2011

The components of this project are in the Final Regional Transportation Plan that was issued July 29, 2010.

City of Fresno General Plan 2025

The Public Facilities Element states that it is the City's policy to minimize vehicular and vehicle-pedestrian conflicts on major streets and adjacent land uses through use of traffic design and control measures that reduce congestion and increase safety.

West Area Community Plan

The City of Fresno's West Area Community Plan covers a triangular area extending westward from the Union Pacific Railroad tracks to Garfield Avenue in the vicinity of this project, including State Route 99 northward to the San Joaquin River. The West Area Community Plan promotes compatibility between areas planned for, or dedicated to, active farming operations and areas planned for urban development. The plan supports, through policy, the establishment of a service area and urban growth management fee for design and construction of planned overcrossings of State Route 99 and for north-south traffic flow improvements within the West Area.

Environmental Consequences

The project is consistent with the 2011 Fresno County Regional Transportation Plan, City of Fresno General Plan 2025, and the West Area Community Plan.

Avoidance, Minimization, and/or Mitigation Measures

None required.

2.1.2 Growth

This section of the environmental document discusses the project's impacts on growth and is based on the March 2011 Growth Memo.

Affected Environment

The revised Central California Futures Institute report titled "Population Forecast for Fresno County to 2025" (dated April 2000) provides a forecast for a modest average annual population growth rate of 1.9 percent between 2000 and 2025. This growth forecast, prepared for and accepted by the Council of Fresno County Governments, indicates that the county population would increase by 479,407 people (58 percent) from a population of 821,797 to a population of 1,301,204 by December 31, 2025. This is consistent with the actual average annual population growth rate of 1.8 percent between 2000 and 2009 estimated by the State of California Department of Finance (Department of Finance, 2009).

Based on historical development and growth trends that have occurred over the past several decades, the city's population is expected to make up approximately 61 percent of the county's population. The 2025 Fresno General Plan is, therefore, intended to serve a population of about 790,000 people over the 25-year planning horizon.

Environmental Consequences

A preliminary analysis was done to determine whether there would be a potential for project-related growth. Factors such as accessibility, project type, project location, and growth pressure were considered. Table 2.2 lists the screening factors used to determine the likely growth potential of the project.

Table 2.2 Preliminary Growth Analysis

Screening Factor	Analysis Discussion
Accessibility	The proposed project would remove an off-ramp (the southbound State Route 99 off-ramp) due to existing intersection spacing concerns on Herndon Avenue, but would not increase access or provide new access to other parts of the project area (i.e., non-roadway uses/lands), extend infrastructure, or increase capacity. With the off-ramp removed, southbound State Route 99 motorists wanting to exit State Route 99 at Herndon Avenue would have to use the existing southbound Golden State Boulevard off-ramp, which intersects with Herndon Avenue east of State Route 99. Consequently, access to Herndon Avenue for southbound State Route 99 motorists would continue to be provided, but without the redundant access that now occurs. Access is available now under the existing condition, but would be reduced with the proposed interchange changes. The proposed project would not increase access.
Project type, location, and growth pressure	The project type involves changes to an existing interchange to improve traffic operations. Surrounding the existing Herndon Avenue interchange is a combination of developed and undeveloped lands in a suburban setting. Typically, transportation projects in urban areas surrounded by rural land uses have a higher potential to cause growth-related impacts as population density and economic activity generate higher demands for conversion of undisturbed lands to developed uses. However, for the immediate project area, the City's General Plan land use plan and the recently approved Fresno Marketplace at El Paseo are expected to generate more traffic, thus triggering the changes needed at the Herndon Avenue interchange, surrounding roadway improvements, and ultimately construction of the planned Veterans Boulevard/State Route 99 interchange project. Influencing growth are the surrounding land use circumstances and development project approvals—not the proposed Herndon Avenue interchange improvements. No land use changes would occur as a result of implementing the proposed interchange improvements.
Foreseeable growth	The proposed project was initiated to address existing operational deficiencies at the interchange, as a response to traffic forecasts based on local plans and growth projections. The modified interchange would support current planned land use within the City of Fresno, including the recently approved Fresno Marketplace at El Paseo planned development.
Growth and its impact on resources	The future growth potential in the vicinity of the proposed interchange is a consequence of actions taken by the City of Fresno on approving local development and General Plan land use. The proposed project would have a potential to affect cultural resources, paleontological resources, and biological resources within the project area, but the project is not expected to affect resources outside the project area.

Based on the results of the screening factors above, the proposed project would not induce growth, and therefore no further analysis is required.

Avoidance, Minimization, and/or Mitigation Measures

No new growth in anticipated as a result of the project improvements. No avoidance, minimization, and/or mitigation measures are proposed because growth impacts would be less than significant.

2.1.3 Community Impacts

This section discusses the project's impacts on community impacts and is based on the March 2011 Community Impact Memo.

Affected Environment

Under the existing conditions, a partial interchange exists at Herndon Avenue and State Route 99 in the northern Fresno area. Southbound and northbound diamond off-ramps are provided, in addition to a southbound on-ramp that reflects a continuation of Parkway Drive. North of the Herndon Avenue interchange is the partial Golden State Boulevard interchange that provides an additional southbound off-ramp providing access to Herndon Avenue, as well as a northbound on-ramp to State Route 99. Together, these two interchanges provide all on- and off-ramp movements from State Route 99 to access either Herndon Avenue or Golden State Boulevard. Some redundancy occurs by both interchanges providing southbound off-ramp improvements.

Surrounding the existing Herndon Avenue interchange are developed and undeveloped lands. On the west side of State Route 99, E-Z Trip service station sits between the Grantland Avenue southbound off-ramp, Herndon Avenue, and Parkway Drive. Traffic exiting the freeway at this location can access the service station by turning right onto Herndon Avenue, right onto Parkway Drive and then right into the station. Motorists can return to State Route 99 via the existing southbound on-ramp, or go elsewhere via Herndon Avenue. West of Parkway Drive (west of the interchange) is a vacant field, and beyond that are residential homes developed in a neighborhood setting. From Parkway Drive, access to these subdivisions is via West Menlo Avenue.

On the east side of State Route 99 are various commercial and industrial uses (hotels, restaurant, coffee shop, fast food, service station, truck stop). Except for the service station and fast food restaurants with driveway access on the south side of Herndon Avenue, all other uses are along Golden State Boulevard (both north and south of Herndon Avenue).

Environmental Consequences

The existing roadways, which establish the area roadway network, would be widened or refined; no new roadways would be built. Therefore, the proposed improvements would not divide an existing neighborhood or cause a breakdown in community cohesion.

No residential neighborhoods in the project area would be adversely affected by the proposed improvements. The existing neighborhood would remain intact and unaffected by the project. West Menlo Avenue currently "T" intersects at Parkway Drive, providing access to the residential neighborhood. While minor widening is proposed along Parkway

Drive and a southbound left-turn lane would be installed at Herndon Avenue, the West Menlo Avenue "T" intersection and access would remain as they are now.

With the elimination of the Grantland Avenue southbound off-ramp, the convenience for motorists accessing the E-Z Trip service station would be affected. However, access to the service station from State Route 99 would continue to be provided from the Golden State Boulevard off-ramp. Drivers would still make three right turns to enter the station, travelling 0.6 mile from the ramp. Once motorists were at the service station, their return to the freeway or local roadway network would remain unchanged and unaffected by the project.

Southbound drivers must make left turns to enter and exit the service station on Golden State Boulevard north of Herndon Avenue and also the service station on the south side of Herndon Avenue between Golden State Boulevard and the northbound State Route 99 off-ramp. With all right-turn access, the service station at 6639 Parkway Drive would still be easier to get to than those stations. Therefore, this station should not experience a loss in business volume, and business should actually improve in the near-term as traffic increases in the area.

Truckers wishing to use the truck stop at 6725 Golden State Boulevard would continue to make all right turns to access the facility. Traffic movement would not be affected for patrons of the truck stop.

Agricultural uses would not be adversely affected (directly or indirectly) with implementation of the proposed improvements.

Avoidance, Minimization, and/or Mitigation Measures

None required.

2.1.4 Utilities and Emergency Services

This section discusses the project's impacts on utilities and emergency services.

Affected Environment

Both above- and below-ground utilities are located throughout the project corridor. PG&E owns power poles and lines that extend across and along Herndon Avenue and along Parkway Drive. Within the project area, PG&E also owns an underground high-pressure gas line. The gas line runs along Grantland Avenue where it crosses Parkway Drive and continues into the State Route 99 median. The gas line then runs north where it meets Herndon Avenue and travels east toward Golden State Boulevard. An underground communication line belonging to AT&T runs along the west side of Parkway Drive, and an

overhead communication line crosses the north side of the Herndon Avenue/Parkway Avenue intersection. An underground fiber optics line owned by Sebastian Fiber Optics extends along the south side of Herndon Avenue, crosses Parkway Drive on the southern side of the intersection, then turns southward along Parkway Drive. The Fresno Irrigation District has a 48-inch culvert within an easement along the west side of Parkway Drive. Water and sewer lines belonging to the City of Fresno also extend along Herndon Avenue and Parkway Drive. Caltrans-owned traffic control devices exist at the southeast corner of the Herndon Avenue/Parkway Drive intersection.

The Fresno Police Department, Fresno County Sheriffs, Fresno Fire Department and other emergency services use Herndon Avenue and connecting roadways to access surrounding areas. Currently, no constraints prevent access through the project area.

Environmental Consequences

The project would have no temporary or permanent impact to utilities. No utilities would require relocation as a result of the project improvements.

Light grading at the edge of the new pavement on the west shoulder of Parkway Drive would extend into the Fresno Irrigation District easement. During the project design phase, PG&E, AT&T, Sebastian Fiber Optics, the Fresno Irrigation District, and the City Department of Public Utilities would be consulted to ensure the project is designed to avoid any impacts to these facilities.

Avoidance, Minimization, and/or Mitigation Measures

A Transportation Management Plan would be in place to ensure timely access for first responders. Response time would be improved on completion of the proposed project.

2.1.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

This section discusses the project's impacts on traffic and circulation, both during construction and after completion of the project, based on the September 2011 Traffic Memorandum.

Affected Environment

A partial interchange exists at Herndon Avenue and State Route 99 in the northern Fresno area. Southbound and northbound diamond off-ramps are provided, in addition to a southbound on-ramp that reflects a continuation of Parkway Drive. North of the Herndon Avenue interchange is the partial Golden State Boulevard interchange, which provides an additional southbound off-ramp providing access to Herndon Avenue, as well as a northbound on-ramp to State Route 99. Together, these two interchanges provide all on- and off-ramp movements from State Route 99 to access either Herndon Avenue or Golden

State Boulevard. Some redundancy occurs by both interchanges providing southbound off-ramps.

Average traffic volume per year at an intersection can be measured by dividing the total traffic count for one year by 365 days to obtain the "annual average daily traffic" count. Table 2.3 shows the annual average daily traffic counts for intersections within and adjacent to the project for existing conditions, 2013 (the proposed construction year), and 2035 (future conditions).

Table 2.3 Existing and Predicted Annual Average Daily Traffic With and Without Project

Intersection	Annual Average Daily Traffic Counts		
	(Existing)	2013	2035
Grantland Avenue/Parkway Drive/State Route 99 southbound on-ramp	**8,600**	**21,700**	**23,100**
Herndon Avenue/Parkway Drive	**9,100**	**21,900**	**23,700**
Southbound off-ramp (Grantland Avenue exit)/Herndon Avenue	**9,700**	**22,693**	**24,600**
State Route 99 northbound off-ramp/Herndon Avenue	**13,600**	**32,000**	**30,800**
Golden State Boulevard/Herndon Avenue	**22,800**	**49,100**	**52,000**

Source: Traffic Memo prepared for this project (September 2011).

In 2013, traffic is projected to increase by 13,100 daily vehicles from the existing traffic volume at the Grantland Avenue/Parkway Drive/State Route 99 southbound on-ramp. At the Herndon Avenue/Parkway Drive intersection, traffic is expected to more than double by 2013. Traffic volumes are expected to increase on the State Route 99/Herndon Avenue northbound off-ramp from 13,600 daily vehicles to 18,400 daily vehicles by 2013. If the State Route 99 southbound off-ramp (the Grantland Avenue exit onto Herndon Avenue) is still in use in 2013, the annual average daily traffic count is projected to increase from 9,700 daily vehicles to 22,693 daily vehicles.

Intersection operation is described in terms of "level of service." Six levels are defined, ranging from level of service A (the best operating conditions) to level of service F (the worst operating conditions). Level of service for intersections is determined by how many seconds a vehicle must wait at a stoplight or stop sign before turning or driving through the

intersection. Caltrans' goal is to maintain the level of service on its facilities at the transition between level of service C and level of service D. For signalized intersections and ramp terminals, the transition is at 35 seconds of delay per vehicle passing through the intersection.

Table 2.4 following shows the existing and predicted level of service at intersections within the project area if the proposed project is not built.

The State Route 99 northbound off-ramp exiting onto Herndon Avenue is now a "T" intersection controlled by a stop sign for left turns and a yield sign for right turns; traffic on Herndon Avenue does not stop. Currently, this intersection operates at level of service E during the morning peak traffic hour and level of service F during the afternoon peak traffic hour. This is below the Caltrans minimum level of service for intersections explained above. The operation of this intersection is predicted to decline to level of service F in 2013 during both the morning and afternoon peak traffic hours.

At the Herndon Avenue/Parkway Drive "T" intersection, vehicles cross through an intersection controlled by three stop signs. During the morning peak traffic hour, the level of service for this intersection is F; for the afternoon peak hour, the level of service is E. This is below level of service D, the minimum acceptable to the City of Fresno for intersections on major arterial streets. Traffic conditions are expected to deteriorate further so that in 2013, the level of service would be F during both the morning and afternoon peak traffic hours.

Vehicles travelling north on Grantland Avenue must stop at the "T" intersection before turning left across an uncontrolled southbound Parkway Drive or right onto the southbound on-ramp. Under existing conditions, this intersection operates satisfactorily with levels of service C and B during the morning and afternoon peak hours, respectively; however, in 2013, increasing traffic is expected to result in level of service F during both the morning and afternoon peak traffic hours.

At the State Route 99 southbound off-ramp/Herndon Avenue intersection (Grantland exit), both the nearness of the ramp to the Herndon Avenue/Parkway Drive intersection and backed-up traffic along westbound Herndon Avenue make access to Herndon Avenue from the southbound off-ramp difficult for motorists turning left. This results in an unsatisfactory level of service D in the morning peak hour. In the afternoon peak hour, the southbound off-ramp operates at level of service C. In 2013, congestion is predicted to increase to the point that the level of service would be F during both the morning and afternoon peak traffic hours at this intersection.

Table 2.4 Levels of Service for Intersections With and Without Project

Intersection	Control	Existing		2013 No-Build		2013 Build Opening Day		2035 No-Build		2035 Build	
		Morning Level of Service	Afternoon Level of Service	Morning Level of Service	Afternoon Level of Service	Morning Level of Service	Afternoon Level of Service	Morning Level of Service	Afternoon Level of Service	Morning Level of Service	Afternoon Level of Service
Grantland Avenue/ Parkway Drive/State Route 99 southbound on-ramp	Signal[(1)]	C	B	**F**	**F**	B	B	**F**	**F**	E	B
Herndon Avenue/ Parkway Drive	Signal[(1)]	F	E	**F**	**F**	B	B	**F**	**F**	C	A
State Route 99 southbound off-ramp (Grantland Avenue exit)/Herndon Avenue	Stop sign	D	C	**F**	**F**	-	-	**F**	**F**	-	-
State Route 99 northbound off-ramp/ Herndon Avenue	Signal[(1)]	E	F	**F**	**F**	B	D	**F**	**F**	D	B
Golden State Boulevard/Herndon Avenue	Signal	C	C	**C**	**D**	C	D	**E**	**F**	E	F

Source: Traffic Memo prepared for this project (September 2011).

Under existing conditions, the levels of service for the ramp were D (in the morning peak) and C (in the afternoon peak) due to the heavier morning peak volume along Herndon Avenue. Roughly 11 percent (morning peak) and 13.3 percent (afternoon peak) of the southbound traffic accessing Herndon Avenue use the existing southbound Herndon Avenue off-ramp. In addition, 89 percent of southbound traffic uses the Golden State Boulevard exit to reach Herndon Avenue during the morning peak, and 86.7 percent of vehicles exiting use it instead of the Grantland Avenue exit during the afternoon peak hour. Roughly 24 percent of the vehicles are trucks. According to Caltrans Traffic Operations, the Grantland exit is underused.

In 2010, a local project by the City of Fresno rebuilt the Golden State Boulevard/Herndon Avenue intersection. Now Golden State Boulevard has two through lanes, dual left-turn lanes, and right-turn lane in each direction. Herndon Avenue has two through lanes, a left-turn lane and a right-turn lane in the eastbound direction. It has three through lanes, dual left-turn lanes, and a right-turn lane in the westbound direction. The three westbound through lanes merge into one lane as they approach the undercrossing at State Route 99.

Currently, there are no sidewalks or bicycle lanes within the project footprint.

Environmental Consequences

Improvements to the Herndon Avenue interchange (road/ramp widening, signals, etc.) would resolve current operational issues and help improve traffic operations over the long term. Most of the proposed improvements require changes to existing facilities. No new facilities are proposed. The project would not add capacity to the state highway system or to local streets.

Table 2.3 above (which contains the same information as Table 1.1) shows that opening day (2013) volumes of traffic at the interchange intersections are expected to be more than double the existing conditions. By 2035, as development continues in the area, it is expected that traffic volumes at the interchange intersections would be slightly higher than the 2013 opening day volumes.

Table 2.4 shows that the proposed improvements at the Herndon Avenue interchange would result in better operations at the interchange intersections on opening day (2013). The intersection levels of service are expected to be as follows:

- B for both morning and afternoon peak for the Grantland Avenue/Parkway Drive/State Route 99 southbound on-ramp intersection

- B for both morning and afternoon peak for the Herndon Avenue/Parkway Drive intersection
- B for the morning peak and D for the afternoon peak for the northbound off-ramp/Herndon Avenue intersection
- C for the morning peak and D for the afternoon peak for the Golden State Boulevard/Herndon Avenue intersection

By 2035, the Herndon interchange intersections are expected to experience a decrease in level of service, indicating that future improvements may be needed. Levels of service are expected to be as follows:

- E for the morning peak and B for the afternoon peak for the Grantland Avenue/Parkway Drive/State Route 99 southbound on-ramp intersection
- C for the morning peak and A for the afternoon peak for the Herndon Avenue/Parkway Drive intersection
- D for the morning peak and B for the afternoon peak for the northbound off-ramp/Herndon Avenue intersection
- E for the morning peak and F for the afternoon peak for the Golden State Boulevard/Herndon Avenue intersection

Except for the closure of the Herndon Avenue southbound off-ramp, all other improvements (roadway and ramp widening, signal and ramp metering installation, and application of turn lanes) were proposed for the El Paseo development project to improve traffic operations. These improvements are intended to resolve the issues involving current traffic operations, which would be exacerbated by the El Paseo development. Removal of the southbound Herndon Avenue off-ramp was assumed in the El Paseo project traffic analysis and therefore is reflected in all delay and level of service calculations; it also factors into mitigation measure requirements proposed for that project. So, the traffic conclusions in the El Paseo Environmental Impact Report and traffic study apply as well to the proposed project.

Traffic would be maintained during construction activities. A minimum of one lane in each direction for Herndon Avenue, Grantland Avenue, and Parkway Drive would be open to the public. A minimum of one lane would be open to the public for the northbound off-ramp. Temporary road and ramp closures may be required during non-peak hours. All staging would occur within the public right-of-way.

In addition, the project would build a 5-foot-wide sidewalk along the north side of Herndon Avenue under the Grantland Avenue undercrossing, extending to Parkway Drive.

Avoidance, Minimization, and/or Mitigation Measures

A Traffic Management Plan would be developed to minimize delays and maximize safety for motorists during construction. The Traffic Management Plan would include, but is not limited to:

- The Caltrans Public Information Office issuing press releases and media alerts, advertisements, and posting planned lane closures on the Caltrans District 6 website
- Use of portable changeable message signs
- Construction staging
- Local road closures
- Night work
- Incident management through a Construction Zone Enhancement Enforcement Program

2.1.6 Cultural Resources

Affected Environment

A Historical Resources Compliance Report was completed by Caltrans for the project on November 30, 2010.

This project falls partially within two Caltrans projects: the Island Park Six-Lane project (06-FRE-99 post miles 30.3/31.6 and 06-MAD-99 post miles 0.0/1.6) and the North Fresno Six-Lane project (06-FRE-99 post miles 26.6/30.7). No previously recorded archeological sites or historical architectural resources were reported within or adjacent to the project area by those studies.

The area within the project area limits, determined by consultation between the Caltrans project manager and archaeologist, was evaluated by Caltrans archaeologists and an architectural historian. Two small areas not included in the Island Park Six-Lane or the North Fresno Six-Lane projects were surveyed for archaeological resources, and no archaeological sites were recorded.

Consultation with local tribes and the Native American Heritage Commission about the Island Park Six-Lane and the North Fresno Six-Lane projects identified previously recorded cultural resources close to the project. Caltrans Cultural Resources staff determined the area

to be culturally sensitive and made recommendations that both Native American and archaeological monitors be considered when working in this area.

Environmental Consequences

Caltrans has determined that a finding of no impact under the California Environmental Quality Act is appropriate because there were no historical resources identified within the project area limits. However, Caltrans Cultural Resources staff determined the area to be culturally sensitive.

Avoidance, Minimization, and/or Mitigation Measures

Archaeological and Native American monitoring has been proposed for both Caltrans projects in the area, and for the adjacent El Paseo development project. Native American monitoring efforts would be coordinated by the City of Fresno with local tribal communities based on previous study participation, with guidance from the Native American Heritage Commission.

If cultural materials were discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, who would then notify the Most Likely Descendent. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable.

2.2 Physical Environment

2.2.1 Paleontology

This section is based on a Preliminary Paleontological Mitigation Plan that was prepared for this project (February 2011).

Affected Environment

The project area lies near the eastern margin of the San Joaquin Valley, near the westernmost foothills of the Sierra Nevada and just south of the geographic center of the state of California. The San Joaquin Valley makes up roughly the southern two-thirds of the larger north-northwest-oriented valley called by such various names as the Valle Grande, Great Valley, Central Valley, Great Central Valley, or California Trough. The Central

Valley lies between the Sierra Nevada on the east and the Coast Ranges on the west. In the general project vicinity, Cenozoic strata occur as alluvial deposits lain down mainly during Plio-Pleistocene time by the streams that drain the adjacent uplands of the Sierra Nevada. The gravel, sand and silt that compose these alluvial deposits have in the past produced significant fossils, mainly large land mammals such as mammoths, mastodons, camels, bison, and horses.

Environmental Consequences

Stratigraphic units within the project area include the Early to Middle Pleistocene Turlock Lake Formation, Middle Pleistocene Riverbank Formation, and Quaternary Alluvium. Both the Turlock Lake Formation and the Riverbank Formation have produced vertebrate and invertebrate fossils in the project vicinity in the past. Strata indicating environments favorable for the preservation of fossils are present in the Riverbank and Turlock Lake formations in the project vicinity.

The Turlock Lake and Riverbank formations have been assigned a high sensitivity rating for potentially yielding scientifically significant fossils, as both formations have produced scientifically significant vertebrate fossils in the past.

Project construction activities, including grading, trenching and drilling, could encounter the formations containing paleontologically sensitive resources.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of and compliance with the Paleontological Mitigation Plan would ensure that impacts to paleontological resources would be less than significant. These measures include the following:

- Doing a pre-excavation site survey, literature review, repository review
- Conducting a project managers and personnel meeting/training program
- Developing and implementing a safety program
- Monitoring and salvaging fossils uncovered by earth-moving activities
- Recording associated specimen/sample data and corresponding geologic and geographic site data
- Collecting sediment samples for microfossil analysis
- Processing sediment samples to salvage microfossils
- Preparing fossils to the point of identification

- Identifying fossils to the lowest taxonomic level possible
- Accessioning and curating fossil specimens into the designated repository
- Archiving associated specimen and site data at the fossil repository
- Preparing the final paleontological mitigation report

2.2.2 Hazardous Materials

This section is based on an Initial Site Assessment prepared for the project (April 2011).

Affected Environment

The purpose of this study was to determine whether the improvement activities associated with the project could be affected by any recorded or visible hazardous waste problems within and adjacent to the interchange right-of-way, and to recommend any additional studies, as appropriate.

Various tasks were completed for the Initial Site Assessment. A governmental records search obtained a listing of properties or known incidents shown on federal and state databases for hazardous waste sites within the project area. The records search included the following databases and regulatory agencies:

- Environmental Data Resources Database
- Orphan Summary/Unmapped Sites Report
- Fresno County Assessor's Office
- City of Fresno Building and Safety Services
- Fresno County Building Department
- Fresno County Environmental Health Services
- CERCLIS Database
- National Priorities List
- Resource Conservation and Recovery Act Facilities Database
- Emergency Responses Notification System
- Cal-Sites List
- Regional Water Quality Control Board
- State Water Resources Control Board
- Office of Environmental Protection

- California Integrated Waste Management Board

In addition, historical records were examined. The following historical information was reviewed:

- Aerial photographs
- Topographic maps
- Sanborn Fire Insurance maps
- City directories
- Interview/Questionnaire

A site visit was done in May 2010 to identify any visible exterior areas of potential contamination that could potentially affect the project.

Physical Site Inspection

During the site visit, environmental concerns were noted. Both pad-mounted and pole-mounted transformers were seen. Additionally, a monitoring well was observed at the southeast corner of the intersection of Herndon Avenue and Parkway Drive. Finally, a gas pipeline marker was noted along southbound State Route 99, south of Herndon Avenue.

Database and Regulatory Reviews

Environmental regulatory databases were searched for proposed projects and surrounding properties to determine the potential incidents at the project site or surrounding properties.

Properties identified in the search were evaluated with respect to their potential to adversely affect the project. Three main criteria were used to evaluate whether the sites warranted further consideration: (1) proximity to the proposed project (less than 200 meters from edge of existing right-of-way); (2) groundwater flow from a site to the proposed project; and (3) surface-water flow or storm water runoff from a site to the proposed project.

The Regional Water Quality Control Board maintains records of reported leaking underground storage tank incidents. This list identified three properties in the project vicinity:

- A service station at 6639 North Parkway Drive has had a leaking underground storage tank in the past. A monitoring well was drilled in 1999 at the site to monitor petroleum hydrocarbons in the groundwater from an underground storage tank release. Based on a statistical analysis of soil, the generated soil is not expected to be classified as a California hazardous waste.

- A truck stop facility at 6725 North Golden State Boulevard is listed as an open site assessment, as of November 2007. Impacts to groundwater have been reported, but the extent of impact has been identified within the property boundary. The truck stop facility is not expected to pose an adverse impact to the site due to the limited extent of impact to groundwater, regulatory status and the direction of groundwater flow. An adverse impact to soil at this site is not expected.
- A service station at 6735 North Golden State Boulevard had a leaking underground storage tank, but the Environmental Data Report indicates that this facility has been issued a case closure letter dated January 2008. The facility is not expected to pose an adverse impact to the site due to its regulatory status and its down-gradient position with respect to the site.

Two other facilities—Curtis Towing Facility and Riverside Golf Course—were listed. Both facilities are 0.4-0.5 mile from the project site and are not expected to pose an adverse impact to the site due to the distance from the site and the regulatory status of the facilities.

Aerially Deposited Lead

Herndon and Grantland Avenues have existed since at least 1923, and State Route 99, Parkway Drive, and Golden State Boulevard have existed since at least 1964 in their current locations. Commercial distribution and use of leaded gasoline was common before 1973, but has been restricted in use by the U.S. Environmental Protection Agency since the mid-1970s. Aerially deposited lead, generated from the emissions of vehicles fueled by leaded gasoline, commonly affects soil next to roadways.

A study was done in October 2000 along State Route 99 between post miles 19.5 and 30.5 in Fresno County and included the area of the site. The study included collection and analysis of 606 soil samples. Based on the total lead and Soluble Threshhold Limit Concentration levels, soil in the Caltrans right-of-way is considered non-hazardous for lead.

A variance issued to Caltrans by the California Environmental Protection Agency Department of Toxic Substances Control allows for the reuse of lead-contaminated soil in the Caltrans right-of-way in roadway corridor boundaries under certain conditions. Based on statistical analysis of soil, the generated soil is not expected to be classified as a California hazardous waste. If the soil cannot be managed to comply within conditions of the variance, it would need to be handled in units. It may be necessary to analyze the off-site disposal choices based on additional analysis of soil samples.

Natural Gas

A gas pipeline parallels southbound State Route 99 at the site. Although a release from the pipeline was not identified in the regulatory agency database search or any of the regulatory agency documents reviewed for the Initial Site Assessment, undocumented releases from petroleum pipelines are common.

Environmental Consequences

As stated above, three service station facilities within the project vicinity were identified in the Initial Site Assessment. However, these sites are not expected to pose an adverse impact on the proposed project site. Impacts to groundwater from the gasoline leak at the service station at 6639 North Parkway Drive may have occurred beneath the western portion of the site near the intersection of Parkway Drive and Herndon Avenue. Appropriate site controls to protect worker safety are recommended.

For aerially deposited lead, based on statistical analysis of soil, the generated soil is not expected to be classified as a California hazardous waste. It may be necessary to analyze the off-site disposal choices based on additional analysis of soil samples.

Project construction is not expected to have an effect on the gas pipeline at the site. Standard pre-construction coordination is required with Underground Service Alert to ensure pipeline avoidance.

Avoidance, Minimization, and/or Mitigation Measures

- Review of the groundwater monitoring and soil analytical data (as they become available) of the gasoline plume at 6639 North Parkway Drive during the life of the project is required. In addition, appropriate site controls to protect worker safety during construction activities are required.
- Lead in soil adjacent to roadways crossing the site should be assessed. A Lead Compliance Plan would be required.
- The Underground Service Alert would be contacted before starting ground-disturbing activities.

2.2.3 Air Quality

This section is based on an Air Quality Impact Memo prepared for the project in September 2011.

Affected Environment

Air quality is a function of both local climate and local sources of air pollution. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant.

The project is located in the San Joaquin Valley Air Basin, which is composed of about 25,000 square miles and covers all of seven counties including Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare, and the western portion of an eighth, Kern. The San Joaquin Valley Air Basin is defined by the Sierra Nevada mountains in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. An aerial view of the air basin would simulate a "bowl" opening to the north. These topographic features restrict air movement through and out of the basin. Local climatological effects, including wind speed and direction, temperature, inversion layers, precipitation and fog, can adversely affect air quality.

Environmental Consequences

Regional Air Quality Conformity

The project is fully funded and is in the 2011 Regional Transportation Plan that was found to conform by the Council of Fresno County Governments in 2007. The Federal Highway Administration and Federal Transit Administration adopted the air quality conformity finding July 29, 2010. The design concept and scope of the proposed project are consistent with the 2011 Regional Transportation Plan and the assumptions in the Council of Fresno County Governments regional emissions analysis.

Air pollutant emissions associated with the project would occur over the short term from construction, such as fugitive dust from grading/site preparation and equipment exhaust. Long-term emissions would improve from the enhanced traffic flow that would result from reconfiguration of the interchange and installation of traffic signals. The aim of the project is to improve traffic operations at the project intersections and lessen backed-up traffic at the northbound off-ramp. The proposed interchange improvements are not expected to generate any additional traffic. Regional trips would remain similar to what they are now. Therefore, no new long-term regional emissions would result from implementation of the

project. The project would improve traffic movement in the project vicinity, thereby lowering the total regional pollutants emitted by motor vehicles.

Project-level Conformity

As noted in 2.5, the project sits in a nonattainment area for the federal particulate matter ($PM_{2.5}$) standard and a maintenance area for the federal particulate matter (PM_{10}) standard. It is in a nonattainment area for the state particulate matter (PM_{10} and $_{2.5}$) standards.

Table 2.5 also shows that the proposed improvements are in a nonattainment area for the federal and state 8-hour ozone standards. Ozone is considered a regional pollutant. Currently, there are no project-level analysis tools or approved guidelines. When projects are listed in an approved Regional Transportation Plan and associated conformity analysis, the projects are considered to be conforming to the State Implementation Plan for ozone.

Air quality thresholds, health effects and sources are also shown in Table 2.5.

Particulate Matter (PM_{10} and $PM_{2.5}$) Analysis

The project is within a nonattainment area for federal $PM_{2.5}$ standards and a maintenance area for federal PM_{10} standards. Therefore, analyses are required for conformity purposes per 40 Code of Federal Regulations Part 93. However, the Environmental Protection Agency does not require hot spot analyses, qualitative or quantitative, for projects that are not listed in section 93.123(b)(1) as an air quality concern.

Table 2.5 State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status Federal	Attainment Status State
Ozone (O_3) [2]	1 hour 8 hours	0.09 ppm 0.070 ppm ---	--- [4] 0.075 ppm [6] 0.08 ppm (4^{th} highest in 3 years)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	1 hour No Federal Standard 8 hours - Nonattainment/ Extreme	1 hour – Nonattainment/ Severe 8 hours– Nonattainment
Carbon Monoxide (CO)	1 hour 8 hours	20 ppm 9.0 ppm [1]	35 ppm 9 ppm	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Attainment/Unclassified	Attainment/Unclassified
Respirable Particulate Matter (PM_{10}) [2]	24 hours Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 --- [2]	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).	Attainment	Nonattainment

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status Federal	Attainment Status State
Fine Particulate Matter ($PM_{2.5}$) [2]	24 hours Annual 24 hours (conformity process [5])	--- 12 µg/m^3 ---	35 µg/m^3 15.0 µg/m^3 65 µg/m^3 (4th highest in 3 years)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.	Nonattainment	Nonattainment
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	0.100 ppm [7] (98th percentile over 3 years) 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Attainment/Unclassified	Attainment
Sulfur Dioxide (SO_2)	1 hour 3 hours 24 hours Annual	0.25 ppm --- 0.04 ppm ---	0.075 ppm [8] (98th percentile over 3 years) 0.5 ppm 0.14 ppm 0.030 ppm	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Attainment/Unclassified	Attainment
Lead (Pb)[3]	Monthly Quarterly Rolling 3-month average	1.5 µg/m^3 --- ---	--- 1.5 µg/m^3 0.15 µg/m^3	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially	No Designation/ Classification	Attainment

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status Federal	Attainment Status State
				Also a toxic air contaminant and water pollutant.	deposited lead from gasoline may exist in soils along major roads.		
Sulfate	24 hours	25 µg/m^3	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	No Federal Standard	Attainment
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	No Federal Standard	Unclassified
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	---	Reduces visibility. Produces haze. NOTE: not related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas.	See particulate matter above.	No Federal Standard	Unclassified
Vinyl Chloride[3]	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	No Federal Standard	Attainment

Based on the California Air Resources Board Air Quality Standards chart (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

Notes: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; ppb=parts per billion (thousand million)

1 Rounding to an integer value is not allowed for the State 8-hour CO standard. Violation occurs at or above 9.05 ppm. Violation of the Federal standard occurs at 9.5 ppm due to integer rounding.

2 Annual PM_{10} National Ambient Air Quality Standard (NAAQS) revoked October 2006; was 50 $\mu g/m^3$. 24-hr. $PM_{2.5}$ NAAQS tightened October 2006; was 65 $\mu g/m^3$. In 9/09 the U.S. Environmental Protection Agency (U.S. EPA) began reconsidering the $PM_{2.5}$ NAAQS; the 2006 action was partially vacated by a court decision.

3 The Air Resources Board has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the Air Resources Board and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong. Lead NAAQS are not required to be considered in Transportation Conformity analysis.

4 Prior to 6/2005, the 1-hour NAAQS was 0.12 ppm. The 1-hour NAAQS is still used only in 8-hour ozone early action compact areas, of which there are none in California. However, emission budgets for 1-hour ozone may still be in use in some areas where 8-hour ozone emission budgets have not been developed.

5 The 65 $\mu g/m^3$ $PM_{2.5}$ (24-hr) NAAQS was not revoked when the 35 $\mu g/m^3$ NAAQS was promulgated in 2006. Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for the newer NAAQS are found adequate or State Implementation Plan amendments for the newer NAAQS are completed.

6 As of 9/16/09, U.S. EPA is reconsidering the 2008 8-hour ozone NAAQS (0.075 ppm); U.S. EPA is expected to tighten the primary NAAQS to somewhere in the range of 60-70 ppb and to add a secondary NAAQS. U.S. EPA plans to finalize reconsideration and promulgate a revised standard by August 2010.

7 Final 1-hour NO_2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial nonattainment area designations should occur in 2012 with conformity requirements effective in 2013. Project-level hot spot analysis requirements, while not yet required for conformity purposes, are expected.

8 U.S. EPA finalized a 1-hour SO_2 standard of 75 ppb in June 2010.

9 State standards are "not to exceed" unless stated otherwise. Federal standards are "not to exceed more than once a year" or as noted above.

The proposed project does not qualify as a project of air quality concern for the following reasons:

- This interchange reconstruction and intersection project would not increase the capacity of State Route 99. Mainline State Route 99 had about a 61,000 average daily traffic count in 2008 with a maximum of 21 percent diesel vehicles (Caltrans, 2009, Annual Average Daily Truck Traffic on the California State Highway System, September). The average daily traffic count near the Herndon Avenue interchange was about 14,337 in 2006 (Omni-Means, 2008; Fresno County Regional Traffic Monitoring Report, April 4). Based on the traffic data, the Herndon Avenue average daily traffic count would not exceed the 125,000 average daily trips threshold for a project of air quality concern. The project would increase the operational capacity of Herndon Avenue, but it would not increase the traffic volumes or truck percentages along the roadways within the project vicinity. Therefore, the project would not result in a significant increase in the number of diesel vehicles.
- The project would not affect intersections that are at level of service D, E, or F with a significant number of diesel vehicles. As indicated in Table 2.4 (from Section 2.1.5, Traffic and Transportation/Pedestrian and Bicycle Facilities), the project would improve level of service at intersections in the study area and would not increase the average daily traffic or result in an increase in the number of diesel vehicles.
- The project would not include construction of a new bus or rail terminal.
- The project would not expand an existing bus or rail terminal.
- The project is not in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

According to the Environmental Protection Agency Transportation Conformity Guidance, an "interchange configuration project that involves either turn lanes or slots, or lanes or movements that are physically separated" is not a project of air quality concern. These kinds of projects improve operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen $PM_{2.5}$ or PM_{10} violations. In addition, the guidance indicates that "interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, and do not involve any increases in idling," are also not considered projects of air quality concern.

Therefore, the proposed project meets the Clean Air Act requirements and 40 Code of Federal Regulations 93.116 without any explicit hot spot analysis. The project would not create a new, or worsen an existing, $PM_{2.5}$ or PM_{10} violation.

Carbon Monoxide Hot Spot Analysis

Historical air quality data show that existing carbon monoxide levels for the project area and the general vicinity do not exceed either the state or federal ambient air quality standards (see Table 2.6). The project would help to improve traffic flow and reduce congestion at the interchange and on local roadways in the project vicinity. The project is in a maintenance area for federal carbon monoxide standards.

Table 2.6 Carbon Monoxide Measurements at the Fresno Monitoring Station

Year or Standard	Carbon Monoxide Measurements at the Fresno (Sierra Skypark) Monitoring Station (in parts per million)			
	1-Hour		8-Hour	
	1st High	2nd High	1st High	2nd High
2008	3.8	3.3	1.03	0.99
2009	N/A	N/A	1.40	1.07
2010	N/A	N/A	0.90	0.78
State Standards	20.0	20.0	9.0	9.0
Federal Standards	35.0	35.0	9.0	9.0

One-hour CO data is not currently available from the Environmental Protection Agency or the California Air Resources Board.
Source: Air Quality Memo (September 2011*)*

Localized air quality impacts—carbon monoxide concentrations (carbon monoxide hot spots) in the project area—would be affected due to improved traffic flow from interchange improvements. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles get backed up and must reduce speed.

The percentages of vehicles operating in cold-start mode are the same or lower for the intersection under study compared to those used for the intersection in the attainment plan.

Traffic volumes on Herndon Avenue and the northbound on-ramp do not change as a result of the project. The project is an interchange reconstruction project that does not increase the capacity or average daily traffic count on State Route 99. There is no reduction in average speeds. The project would improve the traffic flow by improving the level of service at key intersections in the project area.

Carbon Monoxide Hot Spot Conclusion

The carbon monoxide protocol indicates that further analysis is not necessary. Therefore, a detailed hot spot analysis is not required. To provide further evidence that there would not be an expected impact from the project, CALINE4 air quality modeling was done for four of the intersections in the project area. Table 2.7 shows the 1-hour and 8-hour carbon monoxide concentrations that would occur at the Herndon interchange with the proposed project in 2025, the projected full build-out year (completion) of the El Paseo development.

Table 2.7 Carbon Monoxide Analysis

Intersection	Distance from Road Centerline to Maximum Concentration	1-Hour ppm	8-Hour ppm	Exceeds State Standards? 1-Hour standard 20 ppm	Exceeds State Standards? 8-Hour standard 9 ppm
Grantland Avenue/Parkway Drive/ State Route 99 southbound on-ramp	12	4.1	1.6	No	No
	7	4.0	1.6	No	No
	7	4.0	1.6	No	No
	14	4.0	1.6	No	No
Herndon Avenue/Parkway Drive	7	4.2	1.7	No	No
	7	4.1	1.6	No	No
	12	4.1	1.6	No	No
	10	3.9	1.5	No	No
State Route 99 northbound off-ramp/Herndon Avenue	14	4.3	1.8	No	No
	7	4.2	1.7	No	No
	7	4.2	1.7	No	No
	12	4.2	1.7	No	No
Golden State Boulevard/Herndon Avenue	19	4.3	1.8	No	No
	19	4.3	1.8	No	No
	19	4.3	1.8	No	No
	19	4.3	1.8	No	No

Notes: Carbon monoxide concentrations measured in parts per million
Includes ambient 1-hour concentration of 3.3 parts per million and ambient 8-hour concentration of 1.1 parts per million.
Source: Air Quality Memo (September 2011).

Table 2.7 shows that traffic is not expected to exceed any of the state 1-hour or 8-hour carbon monoxide ambient air quality standards at these intersections. Localized air quality impacts related to mobile source emissions would therefore be less than significant for the project.

Naturally Occurring Asbestos

The project is in Fresno County, which is among the counties listed as containing serpentine and ultramafic rock. However, the project is not within the area of the county containing known deposits of serpentine or ultramafic rock. Therefore, the impact from naturally occurring asbestos during project construction would be minimal to none.

Qualitative Project-Level Mobile Source Air Toxics Discussion

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, the Environmental Protection Agency also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (such as airplanes), area sources (such as dry cleaners), and stationary sources (such as factories or refineries).

Mobile source air toxics are a subset of the 188 air toxics defined by the Clean Air Act. Mobile source air toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through an engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

Between 2000 and 2020, the Federal Highway Administration projects that even with a 64 percent increase in vehicle miles traveled, these programs would reduce on-highway emissions of benzene, formaldehyde, 1, 3 butadiene, and acetaldehyde by 57 to 65 percent and would reduce on-highway diesel particulate emissions by 87 percent. In February 2007, the Environmental Protection Agency issued a final rule to reduce hazardous air pollutants from mobile sources. The final standards would significantly lower emissions of benzene and the other air toxics in three ways: (1) by lowering benzene content in gasoline; (2) by reducing exhaust emissions from passenger vehicles operated at cold temperatures (under 75 degrees); and (3) by reducing emissions that evaporate from, and permeate through, portable fuel containers.

For each of the project alternatives (No-Build and Build), the amount of mobile source air toxics emitted would be proportional to the vehicle miles traveled, assuming that other variables such as fleet mix are the same for each alternative. The project would reduce the

delay and either improve the level of service or maintain the level of service at the same level as without the project. For all of the future alternatives (No-Build and Build), emissions would be expected to be lower than present levels in the design year as a result of the Environmental Protection Agency's national control programs, which are projected to reduce mobile source air toxics emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the Environmental Protection Agency-projected reductions is so great (even after accounting for vehicle miles traveled growth) that mobile source air toxics emissions in the study area are likely to be lower in the future than they are today.

Construction Impacts

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment also are anticipated and would include carbon monoxide, nitrogen dioxide, reactive organic gasses, $PM_{2.5}$, PM_{10}, and toxic air contaminants such as diesel exhaust particulate matter.

Site preparation and construction would involve clearing, cut-and-fill activities, grading, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities would temporarily generate PM_{10}, $PM_{2.5}$, and small amounts of carbon monoxide, oxides of nitrogen, and reactive organic gasses. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate carbon monoxide, oxides of nitrogen, reactive organic gasses and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, carbon monoxide and other emissions from traffic would increase slightly while those vehicles are

delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

The San Joaquin Valley Air Pollution Control District does not provide a model for calculating construction emissions; however, construction emissions were estimated for the project using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 6.3.2, which can also be used for projects in the San Joaquin Valley. The recommended thresholds of significance for CEQA analysis of construction emissions were 10 tons per year of reactive organic gasses oxides of nitrogen, and 15 tons per year of PM_{10}. As shown in Table 2.8, none of the criteria pollutants is expected to exceed the annual emissions thresholds.

Table 2.8 Construction Emissions

Project Phases	Reactive Organic Gasses (lbs/day)	Carbon Monoxide (lbs/day)	Oxides of Nitrogen (lbs/day)	PM_{10} (lbs/day)	Exhaust PM_{10} (lbs/day)	Fugitive Dust PM_{10} (lbs/day)
Grubbing/Land Clearing	8.6	39.0	72.0	55.6	3.1	52.5
Grading/Excavation	8.2	35.8	61.2	55.8	3.3	52.5
Drainage/Utilities/Sub-Grade	5.7	22.5	38.3	54.8	2.3	52.5
Paving	6.3	21.5	32.9	2.9	2.9	-
Maximum (pounds/day)	8.6	39.0	72.0	55.8	3.3	52.5
Total (tons/construction project)	0.5	2.0	3.5	3.1	0.2	2.9

Note: Total PM_{10} emissions are the sum of exhaust and fugitive dust emissions.

As noted in Table 2.8, construction emissions for reactive organic gasses, oxides of nitrogen, and PM_{10} would not exceed the tons per year thresholds as recommended by San Joaquin Valley Air Pollution Control District staff. Initial estimates indicate that the Rule 9510 (indirect source review rule) threshold of 2 tons per year for nitrogen dioxide may be exceeded; however, detailed construction schedules and equipment use are not available at this time. Therefore, precise calculations cannot be made at this time, and it is uncertain if the project would exceed the thresholds established in the indirect source review rule.

As more detailed information becomes available, the project applicant would reevaluate the estimates of construction-related emissions, and if necessary, submit an application to the Air Pollution Control District to comply with Rule 9510. Should it be determined that the project must comply with Rule 9510, the project may be required to use special provisions during construction, such as use of reduced emission construction vehicles as a condition of the permit.

Avoidance, Minimization, and/or Abatement Measures

The project would be subject to a Dust Control Permit from the San Joaquin Unified Air Pollution Control District. Observing the District's Regulation VIII requirements and the Caltrans Non-Standard Provisions for Dust should minimize the effect of dust during construction. Additionally, Caltrans Standard Specifications pertaining to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.01F "Air Pollution Control" and Section 10 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

2.2.4 Animal Species

Affected Environment

A Biology Memo was completed for the project in September 2011. The project area sits within the study area for the Island Park Six-Lane project Natural Environment Study, prepared by Caltrans and dated March 2009.

The project sits along State Route 99 and adjacent roadways at the north end of the City of Fresno in Fresno County. Vegetation in the project area consists of ruderal species including ripgut brome (*Bromus diandrus*), wild oats (*Avena* sp.), perennial rye grass (*Lolium perenne*), red-stemmed filaree (*Erodium cicutarium*), horseweed (*Conyza canadensis*), field mustard (*Brassica sp.*), and winter vetch (*Vicia villosa*). No natural communities are present. However, several mature eucalyptus trees (*Eucalyptus* sp.) within the existing interchange provide suitable nesting habitat for raptors and other birds.

Due to the low biological sensitivity associated with project, the evaluation of biological resources in the project area was done through review of aerial and site photographs; a field study was not done. The Department of Fish and Game's California Natural Diversity Database, the U.S. Fish and Wildlife Service, and the California Native Plant Society websites were queried referencing the Herndon, Fresno North, Gregg, and Lanes Bridge 7.5-minute U.S. Geological Survey quadrangles. Species lists from the database searches and a map showing California Natural Diversity Database records within a 5-mile radius around the project site are reproduced in Appendix D.

Environmental Consequences

The biological sensitivity of the project area is low. The project area consists of ruderal vegetation and developed lands. The existing highway and surrounding development has altered the natural landscape by removing natural habitat and introducing non-native plant species.

Potential impacts to biological resources would be limited to widening of the existing State Route 99 northbound off-ramp and widening of Parkway Drive/existing State Route 99 southbound on-ramp. Construction activities would remove ruderal vegetation; this would not result in impacts to biological resources. However, removal of eucalyptus trees could affect nesting birds, which are protected under the Migratory Bird Treaty Act and the California Fish and Game Code.

Avoidance, Minimization, and/or Abatement Measures

Two eucalyptus trees in the project footprint would need to be removed. This should be done during the non-nesting season, between September 1 and February 15. If the eucalyptus trees cannot be removed during the non-nesting season, preconstruction surveys for nesting birds would be done by a qualified biologist no more than 14 days before tree removal. If nesting is identified, the tree would not be removed until any young have fledged or the nest has failed, as determined by a qualified biologist. If no nesting is identified, tree removal would proceed. The eucalyptus trees would be replaced by this project in accordance with current setback standards.

2.3 Climate Change under the California Environmental Quality Act

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988, has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are mainly concerned with the emissions of greenhouse gas related to human activity that include carbon dioxide (CO_2), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 – tetrafluoroethane), and HFC-152a (difluoroethane).

Typically, two terms are used when discussing the impacts of climate change. "Greenhouse Gas Mitigation" is a term for reducing greenhouse gas emissions to reduce or "mitigate" the impacts of climate change. The term "adaptation" refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design

standards to withstand more intense storms and higher sea levels) (http://climatechange.transportation.org/ghg_mitigation/).

Transportation sources (passenger cars, light-duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second to electricity generation) of greenhouse gas-emitting sources. Conversely, the main source of greenhouse gas emissions in the United States is electricity generation, followed by transportation. The dominant greenhouse gas emitted is CO_2, mostly from fossil fuel combustion.

There are four main strategies for reducing greenhouse gas emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of vehicle miles traveled 3) transition to lower greenhouse gas fuels, and 4) improve vehicle technologies. To be most effective, all four should be pursued collectively.

One of the main strategies in the Department's Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 2-1).

To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced.

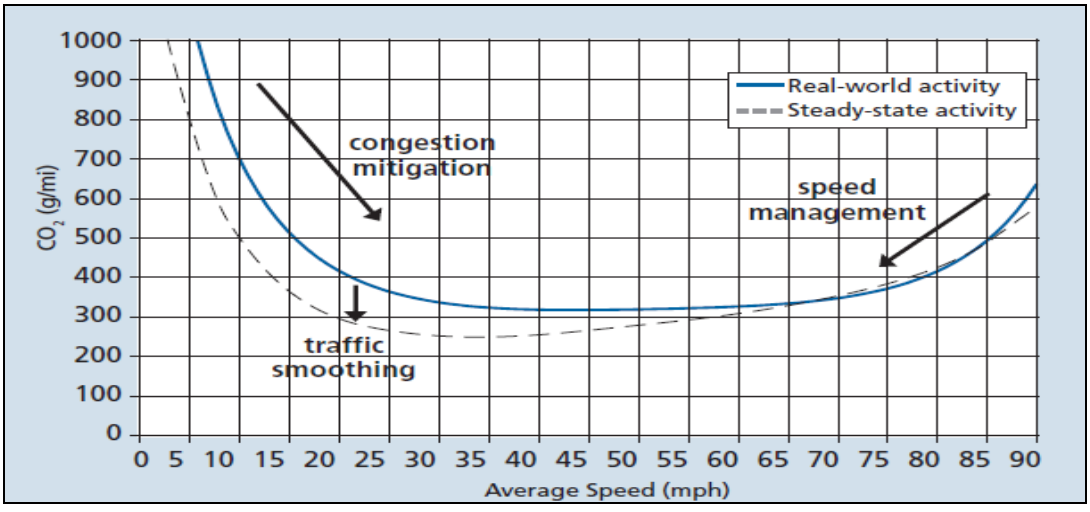


Figure 2-1 Possible Effect of Traffic Operation Strategies in Reducing On-road CO_2 Emission

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the U.S. Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own greenhouse gas emission standards for motor vehicles beginning with model year 2009. California agencies will be working with Federal agencies to conduct joint rulemaking to reduce greenhouse gas emissions for passenger cars model years 2017-2025.

Executive Order S-3-05: (signed on June 1, 2005, by Governor Arnold Schwarzenegger) the goal of this Executive Order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB32 (AB 32), the Global Warming Solutions Act of 2006: AB 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the State's Climate Action Team.

Executive Order S-01-07: Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

Federal

Although climate change and greenhouse gas reduction is a concern at the federal level; currently there are, no regulations or legislation that have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency nor Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on the Federal Highway Administration's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process– from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by the Federal Highway Administration to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and Executive Order 13514- Federal Leadership in Environmental, Energy and Economic Performance.

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the interagency Climate Change Adaptation Task Force, which is engaged in developing a U.S. strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate greenhouse gas. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to

endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009[1]. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse gas emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse gas regulations. These steps were outlined by President Obama in a memorandum on May 21, 2010.[2]

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon (MPG) if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these

[1] http://www.epa.gov/climatechange/endangerment.html
[2] http://epa.gov/otaq/climate/regulations.htm

standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

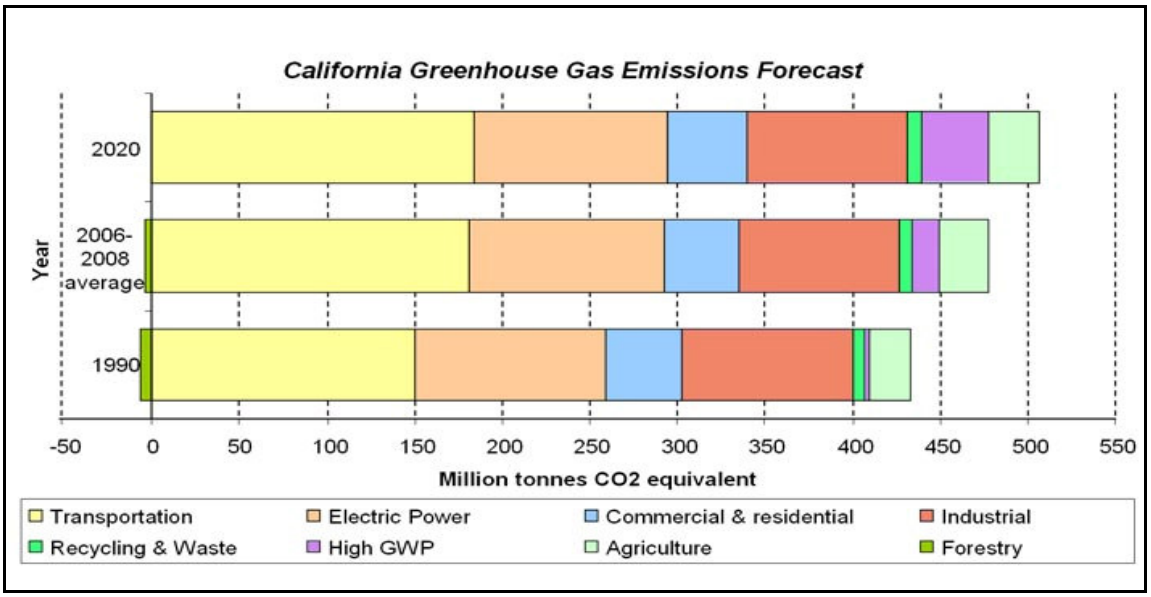
On January 24, 2011, the U.S. EPA along with the U.S. Department of Transportation and the State of California announced a single timeframe for proposing fuel economy and greenhouse gas standards for model years 2017-2025 cars and light-trucks. Proposing the new standards in the same timeframe (September 1, 2011) signals continued collaboration that could lead to an extension of the current National Clean Car Program.

Project Analysis

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gas.[1] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act (CEQA) Guidelines sections 15064(h)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

The AB 32 Scoping Plan contains the main strategies California will use to reduce greenhouse gas. As part of its supporting documentation for the Draft Scoping Plan, the Air Resources Board released the greenhouse gas inventory for California (Forecast last updated: 28 October 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008. See Figure 2-2.

1 This approach is supported by the AEP: Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), as well as the SCAQMD (Chapter 6: : The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).



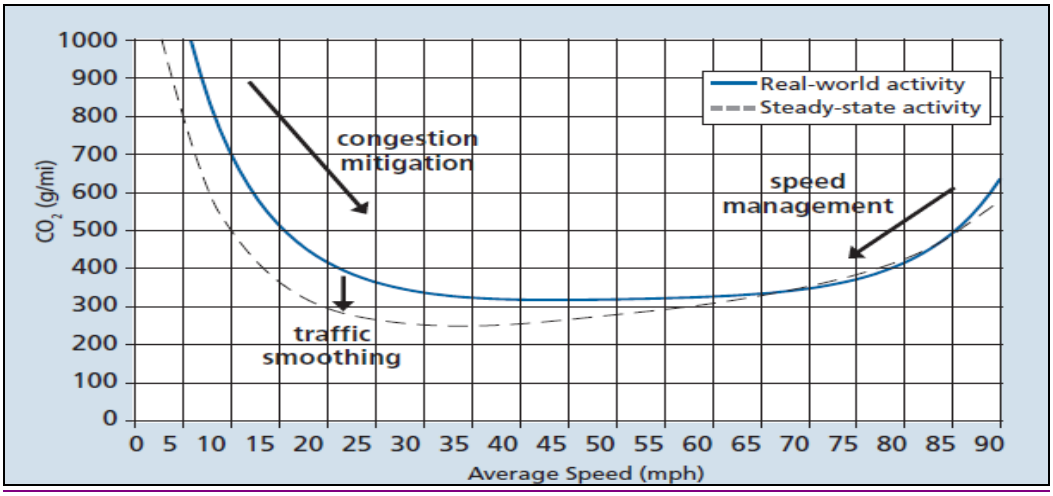
Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Figure 2-2 California Greenhouse Gas Forecast

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human made greenhouse gas emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans (December 2006).[1]

One of the main strategies in Caltrans' Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 2-3).To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors greenhouse gas emissions, particularly carbon monoxide, may be reduced.

[1] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf



Source: Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin(TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf

Figure 2-3 Possible Effect of Traffic Operation Strategies in Reducing On-road CO_2

Qualitative Analysis

Improvements to the Herndon Avenue interchange (road/ramp widening, signals, and ramp closure) are proposed to resolve current operational issues and to assist in improving traffic operations over the long term. Most of the proposed improvements require changes to existing facilities. No new facilities are proposed. This project would not add capacity to the state highway system or to local streets.

Table 2.3 in the Traffic section of this document shows that opening day (2013) volumes of traffic at the interchange intersections are expected to be more than double the existing conditions. By 2035, as development continues in the area, it is anticipated that traffic volumes at the interchange intersections would be slightly higher than the 2013 opening day volumes.

Table 2.4 in the Traffic section shows that the proposed improvements at the Herndon Avenue interchange would result in better operations (improved level of service) at the interchange intersections on opening day (2013) as well as the future build year (2035) when compared to the future no-build conditions.

Although greenhouse gas emissions are expected to increase when comparing existing conditions to future conditions, overall greenhouse gas emissions are predicted to be lower in the future if the project is built than if it is not constructed.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

The project would be subject to a Dust Control Permit from the San Joaquin Unified Air Pollution Control District and Caltrans Standard Specifications pertaining to dust control and dust palliative requirements.

California Environmental Quality Act Conclusion

While there would be unavoidable construction-related greenhouse gas emissions, Caltrans does anticipate that the project would not result in any increases in operational greenhouse gas emissions. It is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it contains a level of uncertainty to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following sections.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as the California Air Resources Board works to implement the Governor's Executive Orders and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Then-Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade.

As shown in Figure 2-4, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

Figure 2-4 Mobility Pyramid

As part of the Climate Action Program at Caltrans (December 2006, http://www.dot.ca.gov/docs/ClimateReport.pdf), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority.

Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light- and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action

Team. It is important to note, however, that the control of the fuel economy standards is held by Environmental Planning Agency and California Air Resources Board.

Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the University of California at Davis.

Table 2.9 summarizes the department and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006), available at http://www.dot.ca.gov/docs/ClimateReport.pdf.

Table 2.9 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.007	2.17
Mainstream Energy & Greenhouse Gas into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects would vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts would help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

The California Resources Agency (now the Natural Resources Agency), through the interagency Climate Action Team, was directed to coordinate with local, regional, state and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy would summarize the best-known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, the Resources Agency was directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010 to advise how California should plan for future sea level rise. The report is to include the following:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates
- The range of uncertainty in selected sea level rise projections

- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems
- A discussion of future research needs regarding sea level rise for California

Furthermore, Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Before the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to build projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. This project is programmed for construction in 2013.

Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) The proposed project is not near a coastal area and is at an elevation where it is not anticipated to be affected by a rise in sea level.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being made as part of then-Governor Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment, which was due for release by December 2010.

On August 3, 2009, the Natural Resources Agency in cooperation and partnership with multiple state agencies released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best-known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release

of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of the discussion draft, including the Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture.

The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to then-Governor Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies could respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events.

As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings. A revised version of the report was posted on the Natural Resources Agency website on December 2, 2009; the report can be viewed at: http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans would be able review its current design standards to determine what changes, if any, may be warranted to protect the transportation system from sea level rise.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings and Native American consultation. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

Coordination with Public Agencies

The project is within the City of Fresno's jurisdiction. The City's Public Works Department has consistently provided input to ensure there are minimal impacts to local residents and business owners. The City has coordinated and had meetings with the County of Fresno regarding the removal of the Grantland Avenue off-ramp. Coordination has also taken place with the Fresno Metropolitan Flood Control District.

Coordination with Native American Heritage Commission

On October 19, 2010, Mandy Marine, District 06 Native American Coordinator, received an updated list of Native American contacts for the project area.

Coordination with Native American Groups

The following groups and individuals were contacted about the project on October 25, 2010. No responses were received as of November 30, 2010.

Mr. Lawrence Bill, Chairperson, Sierra Nevada Native American Coalition
Mr. Bob Pennell, Cultural Resources Director, Table Mountain Rancheria
Ms. Lee Ann Walker-Grant, Chairperson, Table Mountain Rancheria
Mr. Frank Marquez of Friant, California
The Honorable Liz Hutchins Kipp, Big Sandy Rancheria
Ms. Lorrie Planas, Choinumni Tribe
Mr. Jerry Brown, Chowchilla Tribe of Yokuts
The Honorable Robert Marquez, Cold Springs Rancheria
Mr. Keith F. Turner, Representative, Dumna Tribal Council Heritage Committee
Mr. Jim Redmoon, Cultural Resources, Dumna Wo-Wah Tribal Governments

Mr. Kenneth Woodrow, Eshom Valley Band of Indians
Mr. John Davis, Chairman, Kings River Choinumni Farm
The Honorable J. Elaine Fink, North Fork Mono Rancheria
The Honorable Morris Reed, Picayune Rancheria
The Honorable Ruben Barrios, Santa Rosa Rancheria

A letter was also sent to the Dunlap Band of Mono Indians.

Chapter 4 List of Preparers

This document was prepared by the following individuals:

Caltrans

Abdulrahim Chafi, Transportation Engineer. Ph.D., Environmental Engineering, California Coast University, Santa Ana; B.S., M.S., Chemistry and M.S., Civil/Environmental Engineering, California State University, Fresno; 14 years of environmental technical studies experience. Contribution: Review of noise and air quality studies.

Susan Greenwood, Associate Environmental Planner. B.S., Environmental Health Science, California State University, Fresno; 19 years of environmental health, hazardous waste, and hazardous material management experience. Contribution: Review of Initial Site Assessment.

Wendy Kronman, Associate Environmental Planner. M.A., Linguistics, California State University, Fresno; Certificate in Horticulture, Merritt College, Oakland; B.A., Anthropology, Sonoma State University; 5 years of environmental planning experience. Contribution: Oversight of environmental document preparation.

David Lanner, Associate Environmental Planner. B.F.A., Art, Utah State University; 14 years of cultural resources experience. Contribution: Prepared Historical Resources Compliance Report and provided oversight of cultural resources analysis.

G. William "Trais" Norris, III, Senior Environmental Planner. B.S., Urban Regional Planning, California State Polytechnic University, Pomona; 11 years of land use, housing, redevelopment, and environmental planning experience. Contribution: Senior Environmental Planner providing oversight for project.

Sarah Paulson, Biologist. B.S., Molecular Environmental Biology, University of California at Berkeley; 4 years of biological science and natural resource assessment experience. Contribution: Oversight of biological resources analysis.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 21 years of hazardous waste and water quality experience; 4 years of paleontology/geology experience. Contribution: Oversight of paleontological resources analysis. Reviewed Paleontological Mitigation Plan.

Jane Sellers, Research Writer. B.A., Journalism, California State University, Fresno; more than 25 years of writing/editing experience, 11 years at Caltrans. Contribution: Edited Initial Study.

Consulting Staff

LSA Associates, Rocklin, California

Bill Mayer, Principal Environmental Planner. B.S., Urban Planning, California State Polytechnic University, Pomona; 35 years of environmental planning experience. Contribution: Project management and project coordination.

Edward Heming, Senior Environmental Planner. M.S., Environmental Planning, California State University, Fullerton; 8 years of environmental planning and environmental science experience. Contribution: Environmental Analysis.

Amberly Morgan, Assistant Environmental Planner. B.A., Environmental Studies, California State University, Sacramento; 3 years of environmental planning experience. Contribution: Environmental Analysis.

Neal Kaptain, Senior Cultural Resources Manager (Archaeologist). M.A., Master of Arts in Archaeology and Heritage, University of Leicester, England; 14+ years of cultural resource experience. Contribution: Paleontological Analysis.

Steve Conkling, Principal/Director, Archaeology/Paleontology, B.A., Biological Sciences, North Texas State University, Denton; 29 years of cultural resource experience. Contribution: Paleontology Review.

Alexandra Greenwald, Archaeologist. B.A., Anthropology/Archaeology, Mills College, Oakland; 7 years of cultural resource experience. Contribution: Paleontological Analysis.

Jeff Bray, Associate Biologist. B.S., Wildlife Biology, Humboldt State University, Arcata; 16 years of wildlife biology experience. Contribution: Biological resources analysis.

Amy Fischer, Senior Planner. B.S., Environmental Policy Analysis, minor in Geography, University of Nevada, Reno; 10+ years of environmental planning, air quality and noise experience. Contribution: Air Quality Analysis/Global Climate Change.

Phil Ault, Noise/Air Specialist. M.S., Advanced Environmental and Energy Studies for Architecture, University of East London at CAT, Wales, U.K; 7+ years of noise and air quality experience. Contribution: Noise Analysis.

Jason Paukovits, Air Quality Specialist. M.A., Masters of Environmental Management, Duke University, 2001; 13 years of experience in air quality planning, policy and impact analysis, global climate change policy, and transportation planning. Contribution: Air Quality Analysis.

Mark Thomas & Company, Inc.

Ed Noriega, P.E., Division Manager. B.S., Civil Engineering, University of Toledo, Ohio: 16 years of transportation engineering experience. Contribution: Project Manager, Traffic memo review and input.

Kleinfelder West, Inc.

Richard Fink, Principal Geologist. M.S., Geology, University of Nevada, Reno; B.S., Earth Science, University of California at Santa Cruz; 32 years of geology experience. Contribution: Project geology review and seismic input.

Jason Paul, Regional Delivery Manager. B.S., Geology, California State University, Fresno; 23 years of geology experience. Contribution: ISA Project Management, document review.

Kathlien Childers, Assistant Project Manager. 11 years of environmental experience. Contribution: ISA author.

Appendix A CEQA Checklist

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Initial Study. Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or compensation measures under the appropriate topic headings in Chapter 2.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to Greenhouse Gas emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

XII. NOISE: Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. Box 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711

Flex your power!
Be energy efficient!

July 20, 2010

TITLE VI
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnon@dot.ca.gov.

CINDY McKIM
Director

"Caltrans improves mobility across California"

Appendix C Minimization and/or Mitigation Summary

Environmental commitments for the proposed project are described in the Avoidance, Minimization, and/or Mitigation sections in their respective environmental categories in Chapter 2 of this Initial Study. This section summarizes those environmental commitments.

Utilities and Emergency Services

A Transportation Management Plan would be in place to ensure timely access for first responders. Response time would be improved on completion of the proposed project.

Traffic and Transportation/Pedestrian and Bicycle Facilities

A Traffic Management Plan would be developed to minimize delays and maximize safety for motorists during construction. The Traffic Management Plan would include, but is not limited to:

- The Caltrans Public Information Office issuing press releases and media alerts, advertisements, and posting planned lane closures on the Caltrans District 6 website
- Use of portable changeable message signs
- Construction staging
- Local road closures
- Night work
- Incident management through a Construction Zone Enhancement Enforcement Program

Cultural Resources

Archaeological and Native American monitoring has been proposed for both Caltrans projects in the area, and as well as for the adjacent El Paseo development project. Native American monitoring efforts would be coordinated by the City of Fresno with local tribal communities based on previous study participation and with guidance from the Native American Heritage Commission.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission who would then notify the Most Likely Descendent. At this time, the person who discovered the remains would contact the District 6 Heritage Resources Coordinator so that he or she can work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Paleontological Resources

Implementation of and compliance with the Paleontological Mitigation Plan would ensure that impacts to paleontological resources would be less than significant. These measures include the following:

- Doing a pre-excavation site survey, literature review, repository review
- Conducting a project managers and personnel meeting/training program
- Developing and implementing a safety program
- Monitoring and salvage of fossils uncovered by earth-moving activities
- Recording associated specimen/sample data and corresponding geologic and geographic site data
- Collecting sediment samples for microfossil analysis
- Processing sediment samples to salvage microfossils
- Preparing fossils to the point of identification
- Identifying fossils to the lowest taxonomic level possible
- Accessioning and curating fossil specimens into the designated repository
- Archiving associated specimen and site data at the fossil repository
- Preparing the final paleontological mitigation report

Hazardous Materials

Measures for hazardous materials include the following:

- Review of the groundwater monitoring and soil analytical data (as they become available) for the gasoline plume at 6639 North Parkway Drive during the life of the project is

required. In addition, appropriate site controls to protect worker safety during construction activities are required.

- Lead in soil adjacent to roadways crossing the site should be assessed. A lead compliance plan would be required.
- The Underground Service Alert would be contacted before initiating ground-disturbing activities.

Air Quality

The project would be subject to a Dust Control Permit from the San Joaquin Unified Air Pollution Control District. Observing the District's Regulation VIII requirements and the Caltrans Non-Standard Provisions for Dust should minimize the effect of dust during construction. Additionally, Caltrans Standard Specifications pertaining to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.01F "Air Pollution Control" and Section 10 "Dust Control," require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

Biology

To avoid affecting nesting birds, the following measures would be implemented:

- Eucalyptus trees in the project footprint should be removed during the non-nesting season, between September 1 and February 15.
- If the eucalyptus trees cannot be removed during the non-nesting season, preconstruction surveys for nesting birds should be done by a qualified biologist no more than 14 days before tree removal.
- If nesting is identified, the tree should not be removed until any young have fledged or the nest has failed, as determined by a qualified biologist.
- If no nesting is identified, tree removal can proceed.
- The eucalyptus trees would be replaced by this project in accordance with current setback standards.

Appendix D Federal and State Species Lists

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 110907102738

Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio
- Conservancy fairy shrimp (E)

Branchinecta lynchi
- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- valley elderberry longhorn beetle (T)

Fish

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus mykiss
- Central Valley steelhead (T) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)
- Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
- California red-legged frog (T)

Reptiles

Gambelia (=Crotaphytus) sila
- blunt-nosed leopard lizard (E)

Thamnophis gigas
- giant garter snake (T)

Mammals

Dipodomys nitratoides exilis
- Fresno kangaroo rat (E)

Vulpes macrotis mutica
- San Joaquin kit fox (E)

Plants

Castilleja campestris ssp. succulenta
- Critical habitat, succulent (=fleshy) owl's-clover (X)
- succulent (=fleshy) owl's-clover (T)

Caulanthus californicus
California jewelflower (E)

Orcuttia inaequalis
Critical habitat, San Joaquin Valley Orcutt grass (X)
San Joaquin Valley Orcutt grass (T)

Orcuttia pilosa
Critical habitat, hairy Orcutt grass (X)
hairy Orcutt grass (E)

Quads Containing Listed, Proposed or Candidate Species:

LANES BRIDGE (379A)
GREGG (379B)
HERNDON (379C)
FRESNO NORTH (379D)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the

list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to

listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be December 06, 2011.

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
Herndon Avenue Ramp Improvements - Fresno North, Gregg, Herndon, and Lanes Bridge Quadrangles

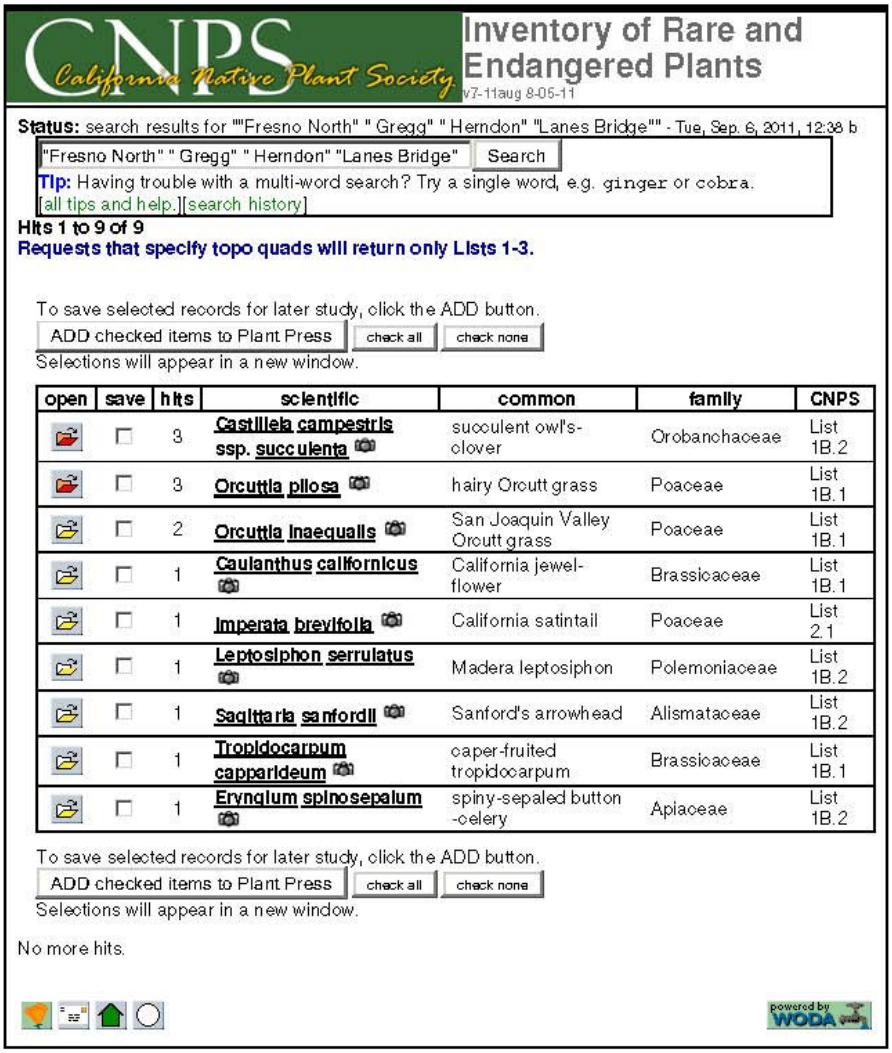
	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	American badger *Taxidea taxus*	AMAJF04010			G5	S4	SC
2	Antioch efferian robberfly *Efferia antiochi*	IIDIP07010			G1G3	S1S3	
3	California horned lark *Eremophila alpestris actia*	ABPAT02011			G5T3Q	S3	
4	California jewel-flower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1.1	1B.1
5	California linderiella *Linderiella occidentalis*	ICBRA06010			G3	S2S3	
6	California satintail *Imperata brevifolia*	PMPOA3D020			G2	S2.1	2.1
7	California tiger salamander *Ambystoma californiense*	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
8	Fresno kangaroo rat *Dipodomys nitratoides exilis*	AMAFD03151	Endangered	Endangered	G3T1	S1	
9	Great Valley Mixed Riparian Forest	CTT61420CA			G2	S2.2	
10	Hurd's metapogon robberfly *Metapogon hurdi*	IIDIP08010			G1G3	S1S3	
11	Madera leptosiphon *Leptosiphon serrulatus*	PDPLM09130			G1?	S1?	1B.2
12	Northern Claypan Vernal Pool	CTT44120CA			G1	S1.1	
13	Northern Hardpan Vernal Pool	CTT44110CA			G3	S3.1	
14	San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	PMPOA4G060	Threatened	Endangered	G2	S2.1	1B.1
15	San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	
16	San Joaquin pocket mouse *Perognathus inornatus inornatus*	AMAFD01061			G4T2T3	S2S3	
17	Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0			G3	S3	1B.2
18	burrowing owl *Athene cunicularia*	ABNSB10010			G4	S2	SC
19	caper-fruited tropidocarpum *Tropidocarpum capparideum*	PDBRA2R010			G1	S1.1	1B.1
20	hairy Orcutt grass *Orcuttia pilosa*	PMPOA4G040	Endangered	Endangered	G2	S2.1	1B.1
21	hardhead *Mylopharodon conocephalus*	AFCJB25010			G3	S3	SC
22	molestan blister beetle *Lytta molesta*	IICOL4C030			G2	S2	
23	succulent owl's-clover *Castilleja campestris ssp. succulenta*	PDSCR0D3Z1	Threatened	Endangered	G4?T2	S2.2	1B.2
24	tricolored blackbird *Agelaius tricolor*	ABPBXB0020			G2G3	S2	SC

Commercial Version -- Dated April 30, 2011 -- Biogeographic Data Branch
Report Printed on Tuesday, September 06, 2011

Page 1
Information Expires 10/30/2011

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
Herndon Avenue Ramp Improvements - Fresno North, Gregg, Herndon, and Lanes Bridge Quadrangles

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
25 valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened		G3T2	S2	
26 vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened		G3	S2S3	
27 western mastiff bat *Eumops perotis californicus*	AMACD02011			G5T4	S3?	SC
28 western spadefoot *Spea hammondii*	AAABF02020			G3	S3	SC



CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

v7-11aug 8-05-11

Status: search results for ""Fresno North" " Gregg" " Herndon" "Lanes Bridge"" - Tue, Sep. 6, 2011, 12:38 b

"Fresno North" " Gregg" " Herndon" "Lanes Bridge" Search

Tip: Having trouble with a multi-word search? Try a single word, e.g. `ginger` or `cobra`.
[all tips and help.][search history]

Hits 1 to 9 of 9

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		3	Castilleja campestris ssp. succulenta	succulent owl's-clover	Orobanchaceae	List 1B.2
		3	Orcuttia pilosa	hairy Orcutt grass	Poaceae	List 1B.1
		2	Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	List 1B.1
		1	Caulanthus californicus	California jewel-flower	Brassicaceae	List 1B.1
		1	Imperata brevifolia	California satintail	Poaceae	List 2.1
		1	Leptosiphon serrulatus	Madera leptosiphon	Polemoniaceae	List 1B.2
		1	Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	List 1B.2
		1	Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	List 1B.1
		1	Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	List 1B.2

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

No more hits.

powered by WODA

Appendix E Regulatory Settings

Community Character and Cohesion

The National Environmental Policy Act of 1969 as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 U.S.C. 4331[b][2]). The Federal Highway Administration in its implementation of National Environmental Policy Act (23 U.S.C. 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion and the availability of public facilities and services.

Under the California Environmental Quality Act, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Growth

The Council on Environmental Quality regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969, require evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences that may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The regulations, 40 Code of Federal Regulations 1508.8, refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act also requires the analysis of a project's potential to induce growth. California Environmental Quality Act guidelines, Section 15126.2(d), require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

Traffic

Caltrans, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

The Department is committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Hazardous Materials

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The main federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous wastes. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. Other federal laws include the following:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated mainly under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are concerns when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Air Quality

The Federal Clean Air Act as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (U.S. EPA) and California Air Resources Board, set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards and State Ambient Air Quality Standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM, broken down for regulatory purposes into particles of 10 micrometers or smaller – PM_{10} and particles of 2.5 micrometers and smaller – $PM_{2.5}$), lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride.

The national and state standards are set at a level that protects public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and state air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act and the California Environmental Quality Act. In addition to this type of environmental analysis, a parallel "conformity" requirement under the Federal Clean Air Act also applies.

Federal Clean Air Act Section 176(c) prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of

Clean Air Act requirements related to the National Ambient Air Quality Standards. "Transportation conformity" takes place on two levels: the regional, or planning and programming, level, and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards that are or were violated. U.S. Environmental Protection Agency regulations at 40 Code of Federal Regulations 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas sulfur dioxide (SO_2). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb). However, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis.

Regional conformity is based on Regional Transportation Plans and Federal Transportation Improvement Programs that include all of the transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plan) and 4 years (for the Federal Transportation Improvement Program). Regional Transportation Plan and Federal Transportation Improvement Program conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the State Implementation Plan are met.

If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration, make determinations that the Regional Transportation Plan and Federal Transportation Improvement Program are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Program must be modified until conformity is attained. If the design concept, scope, and "open to traffic" schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Program, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is in "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is in "nonattainment" if one or more of the monitoring stations in

the region measures violation of the relevant standard, and U.S. Environmental Protection Agency officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. Environmental Protection Agency and are then called "maintenance" areas.

"Hot spot" analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for National Environmental Policy Act purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the hot spot-related standard to be violated and must not cause any increase in the number and severity of violations in nonattainment areas. If a known carbon monoxide or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s).

Paleontology

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects: Antiquities Act of 1906 (16 United States Code 431-433), Federal-Aid Highway Act of 1960 (23 United States Code 305), and the Omnibus Public Land Management Act of 2009 (16 United States Code 470aaa). Under California law, paleontological resources are protected by the California Environmental Quality Act.

Cultural Resources

The term "Cultural resources" as used in this document refers to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include the following.

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800).

On January 1, 2004, a Section 106 Programmatic Agreement between the Advisory Council, the Federal Highway Administration, State Historic Preservation Officer, and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration

involvement. The Programmatic Agreement implements the Advisory Council's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 Code of Federal Regulations 327) (July 1, 2007).

List of Technical Studies that are Bound Separately

- Traffic Memo
- Air Quality Impacts Memo
- Preliminary Paleontological Mitigation Plan
- Biological Compliance Memo
- Noise Impact Memo
- Growth Memo
- Community Impact Memo
- Initial Site Assessment
- Historical Resources Compliance Report
- El Paseo Noise and Vibration Study
- El Paseo Traffic Impact Study
- Island Park Location Hydraulic Study
- Island Park Paleontological Evaluation Report
- Island Park Visual Impact Assessment
- Island Park Water Quality Assessment